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ABSTRACT

This "state of the art" paper summarizes the most significant research rated to the organization and administration of vocational and technical education at high school, community college, and adult education levels as reported between 1963 and 1968. The paper is intended to provide researchers and practitioners with an authoritative analysis of the literature in the field. The Educational Resources Information Center (ERIC) system was a major source of information. Other library resources were used and information was sought from the 45 Research Coordinating Units for Occupational Education. Research is categorized by: (1) policy making, (2) organizing for administration, (3) program planning, (4) staffing, (5) financing and facilities planning, (6) evaluating, (7) school-community relations, and (8) research. A speech by the author based upon this document is available as VT 010 174. (JK)

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Research

Series No. 48

VT 010 173

review and synthesis of research on the

Administration of Vocational and Technical Education

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REVIEW AND SYNTHESIS OF RESEARCH ON THE ADMINISTRATION OF

VT 010 173

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4. To conduct the research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and in-service education program;

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REVIEW AND SYNTHESIS OF RESEARCH ON THE ADMINISTRATION OF VOCATIONAL AND TECHNICAL EDUCATION

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March 1970

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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PREFACE

This *Review and Synthesis of Research on the Administration of Vocational and Technical Education* is one of a series of "state of the art" papers in the vocational and technical education and related fields. It should assist in identifying substantive problems and methodological approaches for researchers as well as providing practitioners with a summary of research findings which have application to educational programs. In the field of vocational and technical education, the pace of research and development activities has increased considerably during the period under review. Gaps which exist for some readers are probably the result of the author's prerogative to be selective.

As one of a series of information analysis papers released by the ERIC Clearinghouse on Vocational and Technical Education, this review is intended to provide researchers and practitioners with an authoritative analysis of the literature in the field. Those who wish to examine primary sources of information should utilize the bibliography. Where ERIC Document numbers and ERIC Document Reproduction Service prices are cited, the documents are available in microfiche and hardcopy forms.

The profession is indebted to Ralph C. Wenrich for his scholarship in the preparation of this report. Recognition is also due Marvin G. Linson, State Director of Vocational Education, Colorado and Keith Goldhammer, Dean of the School of Education, Oregon State University for their critical review of the manuscript prior to its final revision and publication. Joel Magisos, information specialist at The Center, coordinated the publication's development.

Members of the profession are invited to offer suggestions for the improvement of the review and synthesis series and to suggest specific topics or problems for future reviews.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education
ERIC Clearinghouse

INTRODUCTION

This document summarizes and synthesizes the most significant research related to the organization and administration of vocational and technical education at high school, community college and adult education levels, as reported during the period 1963 to 1968. Research dealing with organization and administration of programs in a particular field, e.g., agricultural education, is reported in a review of research in that field; therefore, this report encompasses research which cuts across all occupational fields.

Separate reviews have been prepared, or are in the process of preparation, in: 1) the economics of vocational-technical education; 2) curriculum development in vocational education; 3) job placement and follow-up; 4) organization and administration of work experience programs, and 5) student personnel problems; thus, these areas are not included in this review. Also excluded are community occupational surveys and follow-up studies and investigations to determine the need for area vocational-technical schools or programs which are conducted routinely by local school districts and state departments of education. Exceptions have been made in a few cases where the methodology might have general applicability to the subject of this document.

Excluded, too, are those studies pertinent to the organization and administration of teacher education as developed by state departments and teacher training institutions, unless such investigations are directly related to staffing of state or local programs.

In the context of this review, organization is defined as a function of administration dealing with the structuring or restructuring of roles and relationships of persons in the organizations which facilitate the achievement of organizational goals; the term administrative structure is used synonymously with organization.

For more than 50 years, public vocational education in the United States has been a cooperative venture shared by Federal and state governments with local school districts. It is appropriate, then, that this review illuminate research having to do with the administration of vocational and technical education on the Federal and state levels as well as the administration of vocational and technical education in local school systems.

Until recently, relatively few vocational educators have been concerned about research in organization and administration. Interestingly enough, the 1962 edition of *Review of Educational Research*, devoted to vocational, technical, and practical arts education, reported only two studies dealing with administration, but the most recent edition of this journal has an entire chapter on organization and administration with more than 40 studies reported. Clearly, the need for a review of this kind has been firmly established.

In gathering data for this review, the ERIC system was a major source of information, in addition to other library resources. Furthermore, information regarding pertinent research was sought from the 45 Research

Coordinating Units for Occupational Education. The reviewer is grateful to many key persons in institutions around the country who contributed material for inclusion in this document.

Ralph C. Wenrich

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REVIEW AND SYNTHESIS OF RESEARCH ON THE ADMINISTRATION OF VOCATIONAL AND TECHNICAL EDUCATION

POLICY MAKING

Schools exist in a complex, intricate, and changing social environment. For administration of vocational and technical education to effectively deal with the problems and issues of our times, administrators must have a substantial understanding of this milieu. Social and economic factors must be considered along with dramatic changes in political philosophy. Problems of unemployment and poverty must be recognized as well as the increasing demands for workers at the upper levels of the manpower spectrum. But it is precisely these conditions which have led to an unprecendented interest in vocational and technical education and a new challenge to both administrators and students of administration of vocational and technical programs.

National Policy Making

Countless studies have been made which contribute to the formulation of national policy and much literature is available to help the vocational administrator better understand the social and psychological foundations of vocational education. The studies reviewed here were chosen because they relate more directly to vocational and technical education and especially to the administration of such programs.

At the beginning of the period covered by this review, the Panel of Consultants on Vocational Education, appointed at the request of President Kennedy and headed by Benjamin C. Willis, then Superintendent of Schools in Chicago, made their findings and recommendations known. The report of this important committee, *Education for a Changing World of Work*, U.S. Department of Health, Education and Welfare, (1963) made quite an impact on the general public and particularly on Congress. The new directions given vocational education, as a result of the Vocational Education Act of 1963, were a direct consequence of the work of the panel and their recommendations for the improvement of vocational and technical education.

Contributing to the work of the Panel of Consultants on Vocational Education were a number of special reports. Clark (1963) did a study of the economic and social background of vocational education in the United States. He concluded that laws and regulations should require that vocational education and training be available for all persons and in all occupations but that the formal school systems should not attempt to offer all of this training. He also recommended that a voluntary occupational training council be organized in each community to decide: 1) what part of

vocational education and training the schools should do, 2) what part business and industry and voluntary organizations should do, 3) what part of the training could be obtained while young men and women are in the military services, 4) what part should be provided by the 20,000 schools not in the formal education systems, and 5) what part should be carried on by individual effort. This same occupational training council should study the training facilities in the community to see if they cover all fields, and if not, to take steps to correct the situation. He concluded that since it would probably be easier to change and expand the present system of vocational education than it would be to start with a new system, the present laws and regulations should be used as the basis for part of a comprehensive system that would include all types of agencies and institutions that provide all types of vocational education and training for all parts of the population.

Another special report (as a part of the work of the Panel of Consultants on Vocational Education) was done by Brookover and Nosow (1963) in which they made a sociological analysis of vocational education in the United States. They concluded that it is not only job skills which are involved in vocational education but attitudes, values, and life styles. Since vocational education reflects the needs of the community and the needs of the individual, and since individual self-esteem, personal adjustment, and status in the larger community are directly related in contemporary American society to the occupational structures, these crucial personal variables cannot be neglected in an analysis of the meanings of work and preparation for occupational status.

Venn (1964) had considerable influence on the reshaping of national policy regarding vocational education through his report on a study conducted for the American Council on Education. Although the emphasis in this study was on post-secondary vocational and technical education, consideration was given also to the role of secondary schools in preparing children and youth for the world of work. The report gave 15 specific recommendations and discussed each of them. Some of the recommendations which have become a part of our national policy (and to some extent practice) were: 1) two-year colleges in the United States should make vocational and technical education programs a major part of their mission and a fundamental institutional objective, 2) high schools should establish vocational education programs which offer all youth leaving high school marketable occupational skills or preparation for further occupational education, 3) continuing occupational education for out-of-school youth and adults should become a major function of many more educational institutions, especially those with programs for highly skilled, technical, and professional occupations, 4) occupational education should be an integral and essential part of the total educational system, 5) colleges and high schools should assume responsibility for educational guidance and job placement for drop-outs, 6) occupational guidance and counseling should begin in the intermediate grades and continue through all levels of education, and 7) educational institutions from which students enter the world of work should provide placement assistance to every student.

The authors of the Vocational Education Act of 1963, recognizing the need for flexibility in a rapidly changing society and the difficulties of reorienting institutions to keep pace with new demands, built into the act an evaluation system. One part of that evaluation process was the requirement that the Secretary of Health, Education and Welfare appoint in 1966, and each five years thereafter, an Advisory Council on Vocational Education to appraise the results of the Act and recommend administrative and legislative improvements. The first Advisory Council, under the provision of this Act, was appointed in November of 1966 and charged with the responsibility to report their findings and recommendations no later than January 1, 1968. The report of this Advisory Council, headed by Martin W. Essex, State Superintendent of Public Instruction in Ohio, was published under the title *Vocational Education—The Bridge Between Man and His Work,* U.S. Department of Health, Education and Welfare (1968). The full report was made to the U.S. Senate (1968) Committee on Labor and Public Welfare in March 1968. The report pointed out that the functional responsibility for administration of Federally funded vocational education is both multi-level and multi-agency. At the Federal level there are ten cabinet departments and more than 15 agencies which support or conduct education, training, and related programs with an estimated expenditure of $11 billion in 1968. Because of this involvement of so many Federal agencies in vocational education, it is apparent that overlaps and duplication will develop. Therefore, it is essential that effective administrative procedures be established for inter-agency cooperation at all levels. The report noted that the net effect of recent legislation has been to redefine the role of the U.S. Office of Education; that is, a role which supports the Office of Education as a planning and developmental agency in contrast to a regulating agency. Furthermore, the Vocational Education Act of 1963 called for redirection of the scope and practices of vocational education. Implementation of newly established purposes required rather extensive changes in administration and program practices at all levels. In response to the need for new directions set forth in the act, the Division of Vocational and Technical Education was reorganized; the division structure was changed from the specific occupational program orientation to one oriented toward comprehensive programs and supporting services. These changes were designed to recognize the new responsibilities and to expand the services and leadership role growing out of the new legislation. Another major change in the administrative structure of the U.S. Office of Education was the initiation of a decentralization plan through the establishment of regional offices. Regional offices are intended to help the Federal agency to become more responsible to regional, state, and local needs. Most of the recommendations made by the Advisory Council had to do with Federal legislation, organization, and administration; many of these recommendations have been implemented already through the 1968 Amendments to the Vocational Education Act of 1963.

The National Commission on Technology, Automation and Economic Progress (1966) stresses the impossibility of dividing education into

"economic" and "noneconomic" components, because a broad liberal education has close relevance to the preparation for vocational and technical training. Looked at from a purely economic point of view, education has a tripartite purpose: 1) it can increase the versatility and adaptability of people with respect to vocations and thus increase their capacity to adjust to change; 2) it can increase opportunities for persons who might otherwise have difficulty in finding and holding employment; and 3) it can increase the productivity of workers at any level of skill or ability. Though education is much more than a means of economic progress, it is a decisive factor in the economic advancement of any country. Among the Commission's recommendations are: 1) that most secondary school pupils should defer their vocational training until after high school, and 2) that a nationwide system of free public education through two years beyond high school should be established.

Draper (1967) reported on a study done for the National Committee on secondary Education of the National Association of Secondary School Principals, a section of which was devoted specifically to the administration of vocational education. The final section of this report was a statement by the National Committee on Secondary Education. Their conclusions were: 1) the public educational system has a basic obligation to aid the preparation of all young people for effectiveness in the world of work, 2) many traditional definitions and requirements of vocational education need to be modified to allow for expansion and variation, 3) the development of vocational competence involves much more than what is generally called occupational, vocational, or technical education, 4) vocational education must avoid too-exclusive emphasis on the building of a specific set of skills, 5) great care should be exercised to protect and strengthen each student's general and liberal education, 6) special efforts are necessary on behalf of a sizable group of marginal students, 7) schools must build a greater range of resources and capabilities into their programs to provide instruction and services needed by the range of students now in school, 8) for the achievement of these multiple objectives the comprehensive high school generally provides a good setting, 9) planning for vocational education should be comprehensive, and 10) there is great need for research on every facet of the preparation of youth for vocational effectiveness.

In discussing comprehensive high schools the report stated, that if as many students become involved in vocational education programs as studies indicate could profit from this kind of preparation, the dynamics of secondary education will be different. "If, for example, 50 percent of the students in a high school were in vocational education, the budget, space, and faculty requirements for vocational education would be somewhat more than half of the totals needed by the school. Schools with a large component of vocational education would be institutions considerably different from the conventional secondary school."

Mangum (1968), a member of the advisory Council on Vocational Education, (Essex Committee) did an independent evaluation of the results of the Vocational Education Act of 1963 in which he used much of the

official data gathered by the Council and the staff, supplemented by data and findings from other sources. While his conclusions were essentially the same as those of the total Advisory Council, his report served to sharpen up some of the issues and to this extent, perhaps, is somewhat more forthright and critical than the Council's report. He pointed out that there is indication of a willingness to change and a hunger for leadership. Mangum stated, "Many vocational educators seek avidly for better ways of teaching skills, and most attempt to keep up with the latest developments in their field. There appears to be a general endorsement of efforts to broaden training from individual skills to related clusters. There is resistance to using vocational education funds for teaching 'world of work' concepts and extending its use below the high school level. Opinion is divided on enlarging the post-secondary effort, with state directors of vocational education tending to be high school oriented and junior-college administrators seeking a larger 'cut'. The concept that the school should retain some responsibility until the student is successfully placed in a permanent job is more acceptable to vocational than to general or academic educators." Mangum concluded that the structure was more resistant to change than the individuals within it, and that state administrative structures tended to perpetuate past allocations.

Bemis (1966) reported an interdisciplinary conference on occupational education, manpower and economic change in the United States. The conference was sponsored by Phi Delta Kappa to provide leadership and direction to a series of questions relative to educational research and practice. The symposium brought sociologists, anthropologists and economists together to generate fresh ideas and approaches to this area of education. It was designed to be provocative and broad in scope, devoted to discovering insights into, rather than finding solutions for, educational problems. Although the report does not include transcripts of the six papers presented, it does include a selective summary oriented around two questions, "What ideas from sociology, anthropology and economics were presented to the symposium, and what do they tell us about the social forces that will affect education in the next decade? Second, how can these ideas be used by educators and others to plan needed changes in education?" The summary recommended the need for greater national leadership to help schools cope with the oppressive problems of societal, cultural and economic change. It was felt that greater flexibility was needed in terms of reorganization of the schools and that the field of administrative science has produced a body of principles which might be useful in this regard.

Levitan (1963) did a report for the Upjohn Institute for Employment Research dealing with Federal policy regarding vocational education. He concluded that the traditional Federally supported vocational education program was viewed by the administration as only one part of a national program for manpower development.

Mobley and Barlow (1965) reviewed the history of Federal aid for vocational education beginning with the Smith-Hughes Act. They found that the earlier acts earmarked funds for special programs and established standards

to be maintained while recent acts are more general in nature and do not earmark funds for specific programs. Also Mobley and Barlow concluded that Federal legislation and policies relating to vocational education have been directed toward fundamental issues in American life. Federal legislation has provided a national motivation for states and local communities and has caused programs to develop in areas where such a development would have otherwise been slow and halting.

A case study was made by Kliever (1965) of the steps which led to the passage of the Vocational Education Act of 1963, which includes the activities of the AVA and the work of the Panel of Consultants on Vocational Education.

The U.S. Office of Education influences instructional policy through grants for research and development. A program for the comprehensive high school was described by Morgan and Bushnell (1966) and by Bushnell (1967). Facets of this program are being implemented in 17 high schools across the nation. The educational system for the 70's was designed to provide, through integration and interaction of vital componants, for the achievement of these objectives: 1) preparing all students with entry level job skills, 2) basic learning skills, 3) cross-training in a cluster of occupations, 4) training for the roles of citizens and adults and 5) personal development skills, such as communication, inquiry and problem-solving. The system was designed to permit the maximum self-actualization of each individual and allow him to decide which option to choose after high school graduation rather than before. Also the system, as described, would make full use of modern educational technology.

Arnold (1965) described how the new tools made available by the Congress may be used to develop in each state and local community a total, balanced program of vocational and technical education. He also pointed out, through examples, how really good programs of occupational training fit into a dynamic economy.

Federal educational policy as it relates to vocational education was further defined by Venn (1967), Associate Commissioner for Adult and Vocational Education in the U.S. Office of Education, who started with the concept that occupational education now must become a fundamental part of the total educational system for every individual. He concluded that: 1) it becomes the responsibility of each level of education to assist the individual in making the transition from the educational system to the world of work and 2) schools and colleges must make learning how to work a part of their programs by actually giving work experiences.

Hamlin (1965) emphasized the need for a body of guiding principles for the development and operation of vocational education. Policy regarding vocational education has been developed on the Federal level through national studies and Federal legislation. He stated that major policy actions preceded by reasonably adequate study and discussion were taken in 1917 and again in 1963, 46 years apart. He pointed out that policy making needs continuous attention and furthermore, that the nation has done better than the states or local school districts in developing policy for vocational

education. The national government has demonstrated what can be accomplished when policy issues are carefully examined and action is taken regarding them. He believed that the states and local school districts could profit from the national example.

Vivian (1968), as chairman of the Committee on Administration of Training Programs, submitted to the Secretary of Health, Education and Welfare a report of a study of the administration of training programs which had been authorized and financed by Congress in 1966. The principal purposes of the study were to determine if there is waste, duplication, and inefficiency in administering training programs financed partially or wholly with Federal funds and, if this is determined in the affirmative, to make recommendations for correction. The committee found some waste, duplication and inefficiencies, but not enough to vitiate the usefulness of the programs. The report notes that prior to the time of this study, many of the community officials and others contacted by the committee described the nearly 30 programs as duplicative to a confusing degree, but the situation had been improved to a significant extent by the time the committee reported. The committee made recommendations relating to policy, funding, organization, procedures and staff training. They considered proposals to consolidate the administration of all of the many kinds of training programs into one single Federal agency inappropriate at this time, because now, while rapid innovations in program content are occurring, new target clientele being designated, and various administrative lines of authority being tested, it appears preferable to focus the expertise of the specialized Federal agencies on distinguishable tasks, and to observe the results. However, they did recommend the integration of existing activities within the Department of Labor into a smaller number of general program offerings. They also recommended expansion of comprehensive planning at the community level and that funds be provided for strengthening the Cooperative Area Manpower Planning System (CAMPS). Also recommended was in-service training for administrative and other key personnel at all levels of administration. As a part of this study, the committee employed the services of a research contractor, Greenleigh Associates (1968).

State and Local Policy Making

The role of the state in the administration of vocational and technical education has become much more prominent during recent years and the amount of research relevant to this area is just one indication of this fact. As new Federal programs are inaugurated and increased Federal funds are made available for the preparation of youth and adults for the world of work, it is reasonable to expect that the role of state departments of education in general and vocational divisions in particular will continue to expand. The role of state departments of education must not only expand but must also respond constructively and substantively to the technical, social, political, and economic forces of our society. The research reported in this section assesses these forces in relation to the role of state

departments of education with a view toward making this component of the Federal-state-local partnership a more effective unit.

The Center for Vocational and Technical Education at The Ohio State University has supported a major research and development project to determine the training needs for developing vocational education leadership personnel on the state level, to design pilot in-service and pre-service programs, and to develop simulation and other training materials to be used in training programs. One of the early activities of this project was a national conference jointly sponsored by The Center and The University Council for Educational Administration in which the emerging role of state education departments was explored with specific implications for divisions of vocational-technical education. Rice and Toth (1967) reported on this conference where a number of "background papers" were given which dealt with societal forces impinging upon the state education departments in general and divisions of vocational education in particular. The report also contained three "implications papers" which dealt with the implications which the identified social forces held for the organization and administration of state education departments. The concluding chapter of the report was written by the project director and is a summary of the conference. This report should help personnel in state departments of education define their roles and responsibilities in view of the social and economic factors and forces of our times.

Another major study having to do with state departments of education was done at the University of California at Berkeley. Lee (1967a) developed instruments which were to be used in a study of the expectations and perceptions of the state vocational-technical agencies and their influence upon local programs.

Lee (1967b) also developed a format and criteria for the self-analysis of state agencies for vocational education involving the National Association of State Directors of Vocational Education; the resulting document consists of criteria which state vocational education agencies may use to evaluate their organization and administration with a view toward revising their administrative structures and procedures.

Swanson (1967) did a nationwide study of the organization and administration of vocational-technical education at the state level. He found that in most states vocational education was an integral part of the state's total public education program and the state board of education served also as the state board for vocational education. He found great variations in the ratios of state staffs to the number of teachers in the state. He determined that the role of the state division of vocational education needs to change, concluding that the primary emphasis was found to be on compliance (checking and regulating) and the secondary consideration was change and leadership; he felt that the emphasis should be reversed. Swanson also discovered marked differences in the role perception of personnel in state divisions of vocational education as compared with the perceptions of others outside the department, particularly personnel from local school districts. This study also included an analysis of selected state vocational-

technical education staff positions and a format and criteria for self-analysis of state divisions of vocational-technical education.

State and local policy for Missouri was in the making when Swanson (1966) studied vocational-technical education in the public schools of that state, including the availability, the clientele, the curriculum, the relation of enrollment to employment opportunities, the involvement of persons outside the schools, and ancillary services of these programs. The purpose of the study was to provide the basis for recommendations to improve the state's vocational-technical education services. Some of his recommendations with particular significance for organization and administration were that: 1) the state be divided into six geographic districts and one post-secondary unit with an administrator responsible for the managerial activities within each, 2) ten internships to develop leadership for vocational education in Missouri be developed and maintained jointly by the State Division of Vocational Education, the University of Missouri, and the local school districts, 3) the comprehensive high schools be given first priority for developing vocational education programs, 4) the programs be adapted to serve small high schools, 5) area vocational schools be developed only to supplement the vocational education programs in comprehensive high schools, and not at the expense of high school programs in residential area high schools, and 6) more vocational-technical education programs be provided for persons who have completed high school or who are beyond the normal age of high school attendance and that such services be provided in more locations and for more occupations.

Frigiola (1965) did a study of the situation in New Jersey and concluded that the state needs: 1) county-operated area vocational-technical high schools with diversified and balanced curriculums prescribed by industry's placement demands, 2) publicly controlled two-year county technical institutes with curriculums leading to the associate degree, and 3) utilization of these facilities by adults who need training, upgrading, or retraining.

Beal (1966) completed a study to analyze the decision-making process related to bond issue elections for vocational education programs. He found that superintendents of successful districts evaluated newspaper coverage as more favorable, and parent teacher association involvement as more important than did superintendents of unsuccessful ones, and that vocational education bond issue proposals did not seem to affect the election outcomes.

Social and Economic Considerations

Gibboney (1967) in a paper given in a symposium sponsored by the Massachusetts Advisory Council's Vocational-Technical Education Study said that there is evidence in much of the current literature on new programs for vocational and technical education, that the social fact of poverty is ignored or only dimly perceived by educational planners. He indicated that the social success of vocational-technical education is clearly tied to the larger social problems of poverty and unemployment, and that state and national organizations of vocational educators should reemphasize this

relationship to state and Federal legislators.

Two items in the Sixty-fourth Yearbook, Part I, of the National Society for the Study of Education deal with some of the social and economic considerations as they affect the organization and administration of vocational and technical education. Ginsberg (1965) discussed some social, economic and related trends and then indicated some of the more important implications of these appraisals for the future of vocational education. He made a plea for community coordination through which we might attain much closer correlation among the many different sectors of society that have a direct concern with one or another facet of vocational education. Improved articulation is needed in planning and executing programs among government, education, management, labor, and representatives of the public. Arnstein (1965) discussed technological changes in relation to vocational education and pointed out the fact that education has not kept pace with technological changes. The rapidity of technical and social changes and the concomitant urgency of educational change was emphasized.

Values and Attitudes

Policy-making and planning of vocational education on the state and local level is undoubtedly influenced by Federal actions and especially legislation. But the values and attitudes which people hold, especially those people who are in a policy-making role in the state or local situation, also affect policy and planning. Wenrich and Crowley (1964) developed an instrument which would enable administrators to survey relevant groups in the community to determine how they perceived vocational education. The study resulted in the development of the Image of Vocational Education (IVE) scale which consists of two sections: 1) a Likert-type rating scale and 2) a semantic differential scale.

The values and attitudes of school board members in New Hampshire toward vocational education were assessed by Lynch (1968). Eleven items in the instrument used had to do with organization and administration of vocational and technical education; 65 percent of the respondents were either favorable or uncertain relative to providing a director of vocational education in the local school system at the administrative level directly below the superintendent.

Divita (1968) explored the attitudes held by school administrators and county boards of education members toward vocational education in secondary schools. With a 63 percent response, he concluded that respondents were of the opinion that vocational education programs should have their main thrust directed toward the secondary school level, preferably in area vocational schools; and that present programs of vocational education were not felt to be diverse and/or extensive enough to adequately serve the needs of high school students in preparing for today's world of work.

A comparative study of attitudes and opinions among selected groups concerning occupational education in community colleges was done by Brown (1964). He contacted four groups—high school seniors, their

parents, high school teachers and administrators, business and industrial managers—in two cities, one of which had a community college. He concluded that the existence of a community college in one city (and not the other) did not appear to have influenced the attitudes and opinions of its publics toward occupational education in community colleges. Attitudes and opinions expressed by the four groups in both cities and the jury of experts were generally favorable toward the further development of occupational education programs in community colleges. The instruments and procedures used by the researcher might be used by an administrator in a local community to test public attitudes and opinions before attempting to start or expand a program.

Miller (1966) compared teachers' views with teachers' perceptions of principals' views toward vocational education. He discovered that the attitudes of teachers were more positive toward vocational education than the views they perceived for their principals.

ORGANIZING FOR ADMINISTRATION

The words "organization" and "administration" are frequently used together; but in practice administration includes organization. In order to facilitate the achievement of the goals or purposes of any organization there must be an administrative structure or organization. This structure must be examined critically from time to time and the structure reorganized whenever the goals of the organization could be more effectively or efficiently achieved by so doing. It would appear that the administrative structures of school organizations are frequently considered to be immutable rather than something to be changed by administration as necessary. Organization and reorganization when viewed in this way are clearly a function of administration.

Federal Organization for Administration

The role of the Federal government in education has changed dramatically. From its inception in 1867 until 1950, the Office of Education was concerned mainly with gathering statistics on "the condition and progress of education in the several states and territories." In the case of vocational education, with the passage of the Smith-Hughes Act in 1917, the Office of Education had the additional responsibility for the administration of the Act. This included allocating funds to the several states according to a prescribed formula and "making studies, investigations, and reports to aid in the organization and conduct of vocational education..." More recent legislation has changed the role of the U.S. Office of Education in general and the role of the Vocational and Technical Education Division in particular.

The U.S. House of Representatives' Committee on Education and Labor (1967) did a study of the U.S. Office of Education, including organization, staffing and programs. Observations and recommendations contained in this report were based upon the situation existing at the end of the year 1966. Rather than suggesting another reorganization, the committee recommended that concentrated efforts be undertaken to strengthen the leadership role in vocational and technical education. This report also included a restatement of the main purpose of regional expansion, which is, to better serve the needs of clientele on a local basis at the "grass roots" level. Implied in the regional expansion was a decentralization of decision-making.

The existing organization of the Division of Vocational and Technical Education, as presented in the report, suggests the emphasis in terms of functions to be performed. The three sub-units in the Division are: 1) the Program Services Branch, 2) the State Vocational Services Branch, and 3) the Program Planning and Development Branch. The report pointed out the fact that not all of the functions relating to vocational and technical education are lodged in the Vocational and Technical Education Division; for example, research in vocational and technical education is a responsibility of the Division of Adult and Vocational Research.

Beginning with the Federal Board for Vocational Education the need to establish relations with other Federal government agencies was recognized in a study of the history of the Federal government's involvement in education and training for employment. Ash (1965) pointed out that many Federal agencies are now authorized to provide training activities and related services and greatly increased amounts of Federal funds and technical services are, indeed, made available. This situation makes cooperation among agencies of government an absolute necessity.

During the early history of the Federal-state relationship for purposes of vocational education there was perhaps more concern about Federal control than there is today. Cardozier (1965) examined the question of Federal control in relation to vocational education and concluded that the amount of control the U.S. Office of Education can command depends upon how much state and local administrators are willing to allow.

Selected aspects of Federal guidelines and state plans established for the organization and administration of vocational education in the public schools of the United States were analyzed and evaluated by Vandiver (1968). He concluded that Federal guidelines do not inhibit the development of state plans for vocational education and that most states deserve criticism because they have not exercised leadership in developing effective state plans in those areas in which freedom is permitted by the Federal guidelines. Although somewhat tangential to his study, he recommended that state vocational boards relinquish control over vocational teacher education to an appropriate state agency or organization responsible for certifying other teaching personnel.

State Organization for Administration

The role of divisions of vocational education in state departments of education is perceived differently by different groups. Also, the differences in the perceptions and expectations that various groups have of state divisions of vocational education personnel are significant. Achilles (1967) did a study of the perceived and expected roles of the state division of vocational education. That they are an agency which has both leadership and regulatory functions was substantiated. But whereas the state division of vocational education and other state-level policy groups see the SDVE as performing more of a leadership function than other educators, the other educators indicated more differences between the "does" and "should" dimensions of leadership. The differing emphasis upon leadership and regulation, the differences in the perceptions and expectations of the respondent groups, the similarity between SDVE and state board responses, and the complexity of possible role conflicts stemming from differing role expectations for the SDVE emerge as the salient findings of this study. Perceptions and expectations for the SDVE role were obtained from 905 respondents in 19 states by a questionnaire developed for this study. Respondents representing educator and lay groups which interact with the SDVE were grouped according to predetermined categories and used as variables in the analysis.

A study was done by Rice (1966) which had as the central purpose to identify the role of the state field supervisor of vocational education in Ohio in relation to change as perceived by the supervisors and their reference groups. Data were gathered by mail questionnaire from a random sample of all Ohio vocational education teachers with more than one year's experience, 150 principals selected randomly from all the principals of schools in the state of Ohio offering vocational education programs and from all 26 state field supervisors of vocational education in Ohio. The respondents were asked to rank indicator items representing eight possible types of supervisory behavior, four of which represented continuity-oriented supervisory behavior, and four of which represented change-oriented supervisory behavior. Each of the four items in the two categories, i.e. change-oriented and continuity-oriented, represented a different function of state supervision. The functions were administration, improvement of instruction, evaluation, and public relations. The items were ranked twice by each respondent, once for most like the *ideal* supervisory role and again for most like the *actual* supervisory role. It was found that there were no significant differences among the Ohio groups in the way they perceived the ideal supervisory role. In all cases the groups perceived the actual role of the field supervisor of vocational education to be more change-oriented than continuity-oriented. The findings of the study indicate that while certain functions and activities of state field supervisors in vocational education are explicit in job descriptions and in the literature, variation exists in the way functions are fulfilled and the way activities are performed; a primary variable in the way activities are performed seems to be the attitude or orientation of the supervisor toward change.

One of the most significant studies of the organization of vocational and technical education as it relates to a particular state was done by Schaefer and Kaufman (1968) in Massachusetts. They recommended that the 30 regional vocational-technical schools currently being planned (including those now operating) become state operated Institutes for Educational Development. Four of these institutes should be located in the large metropolitan areas and every boy and girl in the Commonwealth should be within 30 miles of an Institute. The report advocated that students remain under the control of their local high schools for all purposes except their specialized vocational and technical course work. The researchers saw these advantages in this arrangement: 1) cost of the Institutes is shared equally by all taxpayers, 2) opportunity for occupational education becomes equalized, 3) curricula can be developed through statewide planning, 4) educational leadership and teacher competency can be centrally regulated, 5) a substantial program of adult (non-degree) offerings can be more precisely planned. The plan also recommended a revitalized Careers Development Curriculum for the great mid-group of students in neighborhood high schools who are held back by social-economic backgrounds or who lack interest or talent in purely academic or purely vocational pursuits. The Careers Development Curriculum would be non-graded, to prepare for a cluster of occupations and should be elected by students from grades 9 to 12. The specialized programs in the Institutes would be available only to 11th and 12th grade students, and it is anticipated that no more than ten percent of the secondary school students would participate in these programs.

Perhaps the most significant aspect of the plan recommended for Massachusetts was the organization within the State Department of Education. It was recommended that the Careers Development Curriculum be under the general supervision of the state's Associate Commissioner of Curriculum and Instruction and be administered by a separate Bureau of Careers Development, this bureau to be headed by an educational generalist. It was further recommended that the present Bureau of Vocational Education be reconstituted as a Division of Manpower, Research and Development to be administered jointly by the State Department of Education and the State Department of Labor. The Division of Manpower, Research and Development would report to the Commissioner of Education for operational and developmental activities and to the Commissioner of Labor for research activities. The Division of Manpower, Research and Development would have a legally designated advisory committee appointed by the Governor and representing industry, business, labor, education, the behavioral sciences, and the Federal government, and the Director of the Division would serve on the staffs of both the Commissioners of Education and Labor as assistant commissioner to each.

Quite a few studies have been done during this period which were aimed at the organization and/or administration of vocational and technical education in a particular state. Tuxhorn (1967) did a study of the state plans for vocational education of 42 states to determine the specific patterns for organization and administration of area vocational-technical schools in

Oklahoma. Statutes of 32 states were reviewed to determine how the area schools were organized and the state agency which controlled them. He concluded that when area vocational and technical programs operate at the post-high-school level, an agency of higher education should have a voice in policy-making as well as in the organization and administration of these schools. One interesting conclusion of the study was that the technical institute was rated as the best school for training technicians, but that technical students are going to community colleges in increasing numbers for reasons other than acquiring a technical competence. The need for co-operation between agencies of higher education and vocational and technical education was declared essential for good area vocational-technical programs at the post-secondary level.

Hulsey (1966) conducted a study to select, determine, and develop the major elements of an organizational plan for secondary vocational trade and industrial education in Alabama and then to apply this plan in two selected school systems.

The Ohio State Department of Education (1966) has developed a tentative master plan for the development of joint vocational schools in that state.

Wenrich (1963) did a study as a part of the Michigan Vocational Education Evaluation Project of the need for area vocational schools or programs in Michigan. He concluded that most high schools in Michigan are too small to provide a diversified program of specialized training to meet the needs of employment bound youth and that the area concept should be developed.

Slaughter (1963) did a study for the Virginia Commission on Vocational Education. The recommendations to the Governor and the General Assembly of Virginia were that: 1) a state board of technical education should be created to develop and administer the new area vocational and technical education schools and 2) a study should be made of the system of community colleges.

In the state of Kentucky McDowell (1965) assessed the attitudes of teachers, administrators, employers and teacher educators. He then used these as a basis for formulating guidelines for comprehensive area vocational schools to meet the needs in Kentucky.

Smith (1963) investigated vocational and technical education in ten other states and then compared their programs with that of Michigan. He made a number of recommendations for the organization and administration of vocational and technical education in Michigan.

Emerson (1963) studied the North Carolina statewide system for post-high school preemployment and extension training in technical and vocational education through their Industrial Education Centers which were started in 1958. Recommendations for their further development and improvements were made.

The Minnesota Research Coordinating Unit (1968) at the request of the Minnesota State Board for Vocational Education, reviewed the effect of area vocational-technical schools in the state of Minnesota. A geographical distribution of area vocational-technical schools to service the state was

based upon population density and mobility, as well as present and projected student enrollments. Staff and facilities needed were also projected.

There are many different opinions among educators as to how a state can best organize its resources so as to effectively and efficiently serve the needs of its people and the economy of the state insofar as education for the world of work is concerned. The role of the high school versus the role of the post-secondary institutions in providing specialized vocational and technical education is an issue. Whether or not these institutions, either high school or post-high school, should be comprehensive in nature or special-purpose institutions is another issue. The place and function of the local school district versus the State Department of Education as the agency to operate vocational and technical schools and programs (and in some states, the role of the intermediate school district) is an issue. And finally, the role of the area vocational school or center and its relationships to local school districts, intermediate school districts and the State Department of Education presents still other issues. Although these issues may never be completely resolved and not all states will follow the same policies and practices since conditions vary from state to state, a number of attempts have been made to reconcile conflicting points of view and to present a rational basis for the organization and administration of vocational and technical education. McClure (1965), in a chapter of the Yearbook of the National Society for the Study of Education, has synthesized various points of view and has presented a rationale for organizing and administering vocational and technical education. For high school districts too small to offer effective and economical programs in vocational and technical education, the most promising arrangement was to provide special vocational programs for part-time attendance of students who choose them on an area basis. On the post-high school level McClure thought the most imaginative structure for vocational and technical education of less than four-year college level is a state system of comprehensive junior colleges consisting of regional administrative units located strategically with reference to distribution of population and coordinated by a state agency for higher education. McClure did not deal adequately with the organization and structure needed to provide for the continuing education needs of workers.

A long-range statewide master plan for the coordinated development of community colleges and occupational education in Colorado was developed by a consultant firm, Management and Economics Research, Incorporated (1968). One recommendation is that the state be divided into seven community college administrative areas and seven occupational planning programing areas, and that the administrative areas be established as the base for area vocational school systems and that the state board for community colleges and occupational education be responsible for all occupational education curriculums offered in state institutions of higher education. Recommendations for meeting local needs and providing state leadership and specific plans for the Community College of Denver and El Paso Community College are discussed. One section of the report dealing with structure and functions of the state board for community colleges and

occupational education is of particular interest to anyone concerned with state organization.

Spencer (1966) delineated the criteria which should be used in developing a statewide system of comprehensive regional junior colleges for Illinois. Application of these criteria resulted in 14 regional districts in Illinois, with one district (Chicago) having five main campuses. In seven districts there would be a main campus and one or more branch campuses, and six districts would have only one campus. The researcher recommended that a commission be appointed to study the educational and financial advantages of a gradual shifting of responsibility for vocational and technical education from the high school to regional junior colleges.

Ruhig (1968) developed a master plan for vocational education in the state of Hawaii, which provides for the designation of the regents of the university as the Board of Vocational Education with a subordinate coordinating council. He recommended that vocational education be provided at the community college level which should emphasize program flexibility in offering: 1) short-term programs, 2) smaller course units, 3) special summer programs, 4) evening courses, 5) on-the-job and cooperative training, and 6) programs of advanced placement and early admission for high school students. Vocational education at the secondary level should be exploratory, directed at clusters of jobs, and an integral part of general education.

Dauwalder (1964) examined the organization and administration of vocational-technical education in Pennsylvania. In that part of his study having to do with organization, he recommended that the State Board of Education have independent authority over the Department of Public Instruction, that reorganization take place, and that state services be expanded. His recommendations dealt with such problems as program revision, reimbursement patterns, experimental programs, enrollment standards, area schools, technical institutes, community colleges, fees, need determination, and articulation.

Area Vocational Schools and Programs

The concept of providing specialized occupational education on an area basis is accepted and encouraged by Federal policy and Federal legislation. Area schools and programs on both the high school and post-high school levels are being organized and developed at an unprecendented rate. Research activity during the period covered by this review reflects this interest in the area concept.

Hundreds and perhaps thousands of studies have been done throughout the United States to determine the feasibility of area vocational-technical schools or programs. In New York State alone 30 such area studies have been done and the results have been published in individual reports. More than 35 such area studies have been done in the state of Michigan where the purpose was to determine the feasibility of an area vocational school or program in terms of the amount of financial support and the extent of student interest; a secondary purpose was to get involvement on the part of

businessmen, industrialists, educators and other taxpayers in the area so that they might become more sensitive to the problems and needs and, therefore, support the development of an area program, if needed. Similarly, numerous studies have been done to determine the feasibility of a community college in a particular area, many of which are designed to serve the occupational education needs of post-high school youth and adults. Obviously, these area studies are too numerous to report here. Their value to persons outside the area lies mainly in the methodology employed.

In the state of Ohio, areas were surveyed by personnel from the State Department of Education. Shoemaker (1965) described the procedures used in Ohio and identified the various segments of the community which should be involved in such surveys. A study was done by Burns (1964) to investigate the factors governing the establishment and operation of area vocational-technical schools and programs in the United States. Data were gathered from 42 state directors of vocational education and 278 local directors of area vocational-technical schools and programs in these 42 states. These data were tabulated and the measures of central tendency determined for such factors as number of high school students in the area, the amount of taxable wealth, the geographic area in square miles, the employment potential, the extent of voter approval, the extent of student interest, the extent of industrial support, the number and types of training agencies already located in the area, the type of legal governing body and the type of administration. Data from seven of the 42 states most nearly like Missouri were then analyzed to determine how each of these factors should influence the establishment and operation of the area vocational-technical schools in Missouri. It was concluded that $78 million of taxable wealth in the geographical area with a minimum of 6,500 high school students would be sufficient to successfully establish and operate a vocational-technical school or program in Missouri. The investigator expressed caution: no area vocational-technical school or program should be established until the support of roughly 75 percent of the industries of the area was assured, about 40 percent of the students of the area should express an interest in the training to be offered and approximately 75 percent of the voters should approve the project, and the geographic service area should fall within a radius of 48 miles for a rural community, 36 miles for a suburban community and 27 miles for a city. He concluded that a successful area vocational-technical school or program would require a qualified director of vocational education as its administrator.

Hughes (1966) did a study of area vocational schools in the United States, finding that, of the 45 states responding, 35 reported the existence of area vocational schools. His report includes a brief resume of the activities in each of the 35 states.

A predictive model for use in locating area vocational schools was developed by Uxer (1967). A jury of 30 educators was used to rank the major elements of a predictive model. Most of the data were obtained during site visits by the investigator to the 14 states selected for the study. A total of 94 area vocational schools comprised the sample. Each of the area vocational

schools in the sample were classified as successful or less successful by the state directors of vocational education and the investigator. The investigator found that: 1) other states have not used multivariate, statistical procedures in locating area vocational schools, 2) the correlation of programs offered with skills needed was low in some areas, 3) the majority of graduates are placed in the immediate geographical vicinity, and 4) broad, long-range plans are needed to properly implement a vocational education program. The investigator also concluded that the multivariate approach to decision-making results in more objective and more economical decisions than most other methods.

Guditus (1965) attempted to develop a rationale for the area vocational (technical) school. He set out to test four theses: 1) that the potential for new institutions for vocational education is established through the inability of existing institutions to meet changing conditions, 2) that the purposes of the various institutions currently offering vocational education are significantly overlapped, 3) that a rationale for vocational education is urgently needed and can now be developed, 4) that significant differences of opinion presently exist between responsible officials in vocational education and employers in modern industry as to the appropriate manner and level of training for future employees. The first three theses were approached through documentary analysis and augmented by "other information obtained through conversations with several officials of recognized prominence in the vocational (technical) school movement in Pennsylvania and also by visits to schools typical of the institutional model." The fourth thesis was explored by comparing the opinions of industrial leaders in the Lehigh Valley (Pennsylvania) with "certain vocational (technical) educators who hold responsibility for developing educational policy for that area." The researcher conducted interviews with 14 randomly selected individuals in each of the two groups using a prepared schedule of questions. Regard the first thesis, the investigator concluded that the secondary area vocational (technical) school as presently conceived is adequate for meeting some current needs but its functional role is transitional. It will serve the needs until occupational, vocational, and technical education are provided by truly comprehensive secondary schools and truly comprehensive community colleges. Regarding the second thesis, it was concluded that: (a) there is, at present, no unified plan for developing vocational (technical) education in Pennsylvania, (b) very similar purposes are undertaken by various institutions, and (c) each are competing for public favor and support. The investigator also found his third and fourth theses to be tenable. He recommended that the area vocational (technical) school should be fitted into a transitional role until the truly comprehensive high school emerges and that a statewide system of community colleges should be developed which would provide post-secondary vocational-technical education among its offerings.

Area programs can be organized either on a full-time basis or on a shared-time basis. Meaders (1968) has investigated the shared-time concept for area vocational education programs. Students engaged in shared-time

programs have, as it were, "dual enrollment" but at the same time maintain their identity with the "home" school. The objectives of Meaders' work with the shared-time concept are: 1) to survey the existing shared-time programs with specific reference to vocational education, 2) to develop working principles for such programs and 3) to disseminate information concerning the programs. Meaders reports that there are problems in the organization for administration of shared-time programs in vocational education but these problems are not insurmountable. He feels that the advantages far outweigh the difficulties and that such programs form one of the most effective schemes for providing "comprehensive" education for the modern high school youth. His work is to be reported in four parts. In addition to the reference cited here, three additional reports are forthcoming, Part II dealing with *Considerations for Curriculum Development,* Part III, *Practices and Procedures* and Part IV, *Financing and Administering Area Programs.*

Internal Administrative Structure

Dennard (1964) did a study of the administrative organization and practices of selected vocational-technical schools in the United States for the purpose of drawing implications and making projections from this study for the organization of the Atlanta Vocational-Technical School. He included a total of 15 schools, including community junior colleges, technical institutes, area vocational-technical schools, technical high schools, vocational high schools and comprehensive high schools. Data were gathered through a questionnaire, printed materials, observations and personal interviews. The interviewer found that, although most local public school systems present administrative organizational structure in graphic form, this practice was not followed by the majority of the vocational-technical schools investigated. Also the majority of the vocational-technical schools geared their organizational patterns to the prevailing administrative structure of the local school system as it related to length of term, length of instructional periods and semester or quarterly grade reporting periods. The administrative organizational structure which the investigator projected for the system-wide administration of vocational-technical education in the Atlanta Public Schools was designed to integrate occupational education curricula into the total curricular structure from the intermediate grade levels through the 14th year. An administrative organizational structure for the projected occupationally-oriented community junior college was provided.

Three investigators studied the roles and relationships of the chief vocational-technical education administrator in public two-year colleges. Whitney (1967) identified the administrative levels, job titles, duties, responsibilities and conditions of employment of the chief vocational-technical education administrator in relation to the patterns of administrative structure of junior colleges offering occupational curricula. All junior colleges listed in the 1966 *Junior College Directory* were contacted. The 255 chief vocational-technical education administrators who responded provided the data used in this study. Six percent of the vocational-technical ad-

ministrators were first-level administrators (president or dean of the college), 45 percent were second-level and 44 percent were third-level while five percent were fourth-level administrators. Three-fourths of the administrators devoted full-time to administration and the majority were employed on a 12-month contract, 76 percent had previous occupational experience. Salaries ranged from $6,500.00 to $30,500.00 with a mean of $12,955.00. Most administrators were very satisfied with their jobs. The investigator identified 121 administrative duties and responsibilities which were grouped into seven major areas. Administrators were working under 137 different titles predominantly containing either the word "dean" or "director." Eight administrative organizational patterns were identified ranging from those in which the chief vocational-technical administrator and the president were one and the same, to those in which the vocational-technical administrator was a coordinator with only staff authority. The largest percentage of schools were organized so that the chief vocational-technical administrator reported directly to the president and had parallel status with the dean or director of the academic program. A similar study was done by Fielding (1966) but with slightly different purposes. He, too, contacted the 479 public junior colleges listed in the 1966 *Junior College Directory* for the purpose of ascertaining the actual qualifications and duties of deans and directors of vocational-technical programs in these institutions and also to ascertain desirable qualifications for persons in such positions. He also examined certain aspects of the organizational structure as they pertain to the administration of the vocational-technical program. Of the 350 institutions that responded, a total of 235 directors of vocational-technical education were identified. Data were gathered from both the chief administrative officer and the administrator of the vocational-technical program. While there was some discrepancy between the opinions of the chief administrative officials and the directors regarding the place of the position of director of vocational-technical education in the administrative structure of the public junior college, the investigator concluded that the director should report at the first level. A large increase in the number of positions of director of vocational-technical education over a three-year period was noted.

Gates (1964) studied the roles of the administrators' of technical education programs in public junior colleges in the United States and explored the relationship between selected characteristics of such administrators and the type of programs administered by these persons. Of the 85 administrators who met the criteria established for this investigation, 66 replied. Fifty institutions were represented by these respondents. The typical respondent performed duties and had responsibilities in all major headings—general administration; teaching assignments; student personnel work or guidance; research and publication; cooperative enterprises with industry, business, agriculture and/or public services; national professional activities; local and state professional activities; and community participation. The typical administrator was responsible to the president, had the title of either director or dean, had 16 or more faculty members to supervise, and served on the academic council and curriculum committee. Since he was

directly responsible to the president, he was on the same administrative level as the major administrator of the transfer program. A typical administrator supervised curriculums in more than one family; however, he directed these curriculums at a single level of rigor. The investigator found no statistical evidence of a relationship between selected characteristics of the respondent—educational background, and work experience, and the type of program he directs.

Heger (1968) did an exploratory and theoretical study for the purpose of: 1) analyzing the decision-making process of school superintendents, especially as the process relates to a modification and/or initiation of vocational programs in high schools in the state of Idaho; 2) to test the theory of administrative change as it relates to vocational education; 3) to determine those conditions in which vocational education program changes are more likely (or less likely) to occur; and 4) to develop a method of quantifying the properties of the open system. A prime concern with this study is the concept that administrative decisions are generated from the total school system and its environment. The exploration of this concept has been facilitated by various properties of the open system theory and propositions of the system theory of administrative change. An interview instrument was used to obtain information relative to these properties and propositions and to vocational program change. The study was concerned with basic relationships rather than degrees of relationship; hence, the statistical analysis of the data consisted of the chi-square test of independence. The conclusions drawn are for a 50 per cent stratified random sample of Idaho superintendents who were responsible for secondary school programs.

Three of the most significant contributions this study can make to the field of school administrative change are: 1) the development of a means to measure the properties of the open system theory; 2) the extent to which the stated propositions of the system theory of administration are upheld; and 3) the strength of predicting vocational program change based upon measurable conditions of interrelationships in a school district. Significant differences (at .01 level of confidence) were found to exist between change and the propositions referring to hierarchical structure and the dynamic interplay of sub-systems. That is, the results indicated that the more hierarchical the structure of an organization, the more likely is change, and also, the more functional the dynamic interplay of sub-groups, the more likely is change. The results show a significant difference between change and the employment of a superintendent from outside the district, rather than from within. The researcher also found significant differences between certain properties and propositions, namely: study states and hierarchy; dynamic interplay of sub-systems and superintendent appointed from the outside; feedback processes and intensity of supra-systems stimulus; and progressive segregation and dynamic interplay of sub-systems. The researcher offers possible explanations for these relationships.

Kazanas (1967) studied the formal administrative structure of 76 larger comprehensive public high schools in Michigan as it relates to vocational

and technical education. High schools are generally organized by departments, each of which has a subject-matter orientation. Such schools are classed as "process-based." High schools which are organized in terms of the goals or purposes of education are classified as purpose-oriented or "purpose-based." The researcher hypothesized that the extent to which the formal administrative structure helps the vocational and technical education program in meeting its objectives in larger comprehensive high schools is significantly higher in the purpose-based than in the process-based school organization. Although he found no schools which were totally organized on the basis of purpose he found many whose vocational purposes were recognized in the structure for administration. There was a significant relationship between schools which reflected this purpose orientation in their organization and the achievement of vocational objectives.

Mason (1963) investigated the organization for the administration of vocational education in selected Michigan high schools. Sixty-one high schools were studied to determine which positions had authority over administrative matters and to relate the pattern of authority distribution to the effectiveness of the vocational education programs. He found that those schools whose vocational education programs were thought to be more effective had delegated more authority for decision-making to the director of vocational education. The investigator recommended that written policies be established which clearly indicate the place of and goals for vocational education programs in the school, and that such policies also clearly indicate the duties and relationships of personnel in the vocational education programs. He also recommended that designated positions carry responsibility and authority as well as title, and that the position of either departmental chairman or director of vocational education be designated where the size of operation and/or need for such position is warranted. He also recommended that the superintendent be encouraged to delegate to the principal responsibility for program appraisal, for supervision, for hiring and dismissal of teachers, and that where the size of operation warrants subdelegation, the principal continue to be charged with primary responsibility for these functions of administration.

Richardson (1966) directed a conference on occupational education in the two-year college. On this occasion, F. Parker Wilber, President of Los Angeles Trade-Technical College, presented a paper on "Occupational Education and Administration" in which he claimed that the administrative structure of a college must be designed to promote balance and to effectively achieve the varied educational purposes of the institution. He stated that organizational structure determines the scope and services of technical education available to the students, and that most junior college structures result in domination of the organization by the university transfer function. He defined the roles of administrative personnel in the structure with particular attention to school-community relations and interpretation of the program.

Harris (1964), in a report on technical education in the junior college, included recommendations for the internal administrative organization for a

comprehensive community college, in order to provide the necessary leadership for the development of occupational curriculums.

Wenrich and Shaffer (1965) conducted a study involving principals of 106 large high schools in Michigan to determine their perceptions of the roles of persons charged with the responsibility for leadership in the development of occupationally oriented programs in high schools. The purpose was to determine how they would use an assistant who would be assigned the responsibility for developing programs for employment-bound youth. Duties, responsibilities, and relationships which the assistant might be expected to assume or develop were also studied. The areas of responsibility ranked in order were: 1) pupil personnel, 2) school-community relations, 3) instructional program, 4) business functions, and 5) teaching personnel. In reacting to specific administrative tasks, the principals ranked the following activities highest: 1) locating and organizing instructional materials, 2) determining local occupational education needs, and 3) operating a student job-placement program.

PROGRAM PLANNING

The planning of of vocational and technical education programs is an administrative function which is performed at the state and/or local levels. In most states the planning of specific programs is a cooperative venture in which both the state and the intermediate and/or local districts participate.

Program planning on any level is generally preceded by a study of the manpower conditions in general and the specific manpower needs in a particular area plus an assessment of the needs and interests of those to be served. The development of curriculums to meet the needs of the economy and the needs of the people can then be developed.

Manpower Conditions—General

The annual Manpower Report of the President, prepared and published by the U.S. Department of Labor (1968) includes basic data regarding manpower requirements and resources. It is a document containing much current information of value to anyone interested in organizing and operating vocational and technical education programs.

Vocational education for females, except for programs in home economics and office occupations, has been limited. Lee (1967a) and others have engaged in a project devoted to the implications of women's work patterns for program planning in vocational and technical education. The report focused on labor force participation of women and the implications for program planning and evaluation in vocational and technical education. The implications discussed in the report were identified by leaders who participated in a two-day work conference assembled for this purpose. As part

of this project, but as a separate report, Lee (1967b) produced an annotated bibliography.

The fact that the vocational education system in the United States was becoming more removed from the dynamics of the labor market was recognized by the Panel of Consultants on Vocational Education; this group emphasized the need for a closer correlation between occupational education and the possibilities for employment. As a result, the Vocational Education Act of 1963 requires collaboration between the public employment offices in each state and the State Board for Vocational Education and local educational agencies.

Somers (1968) evaluated the relationship of vocational education to the labor market. He concluded that the vocational educator's response to the dynamic changes in the labor market has been sluggish and inadequate. He stated that although vocational educators have been slow to react to labor market changes, economists and employment experts must share some of the blame; the labor market data provided for the use of the educators have seldom been adequate in quantity, quality, or in the form required by vocational planners. All-important projections of specific occupations, job clusters, and area-dimensions have been especially lacking. These are admittedly difficult matters for analysis, but Somers concluded that the vocational educator has reason to react sensitively to criticism because it is not his responsibility to provide the needed labor market data. Some of this criticism of vocational education is justified, however, because of the vocational educator's failure to make use of the labor market data that are available.

In a staff paper by Striner (1967) it was predicted that jobs in our economy in 1984 will call for over 60 percent of the total labor force in the service sector and less than 30 percent in manufacturing; the remainder will be in mining, agriculture, or unemployed. He also observed that the assumption that public education is synonymous with public schools may be invalid by 1984; the value of using private schools as a system complementary to the public system will be seen more clearly.

Lecht (1968) projected the manpower needed in order to meet the national objectives as identified by the President's Commission on National Goals in 1960. The Center for Priority Analysis of the National Planning Association, with which Lecht is associated, is currently engaged in an extensive research project titled "Identifying Priority Areas for Planning in Vocational-Technical Education." The study is designed to relate manpower projections derived from the analysis of national goals to the need for vocational-technical education. Studies are being done of projected career openings in social welfare, education, health, transportation, urban development, space and research and development occupations with specific implications for priorities in vocational-technical education.

Manpower Conditions and Needs—State

Program planning on the state level requires that there be some assess-

ment made of the manpower needs within the state. Some states have acquired this kind of information through a series of area manpower needs studies. The area studies done in New York State and in Michigan are examples. (See section on "Area Vocational Schools and Programs.") The results of these area studies may then be put together to form a mosaic for the state; but other procedures for assessing manpower needs have also been used.

A comprehensive study aimed at planning a state-wide program for the state of Missouri was done by Karnes (1966); whose purpose it was to determine how well existing and proposed vocational programs correspond with projected manpower needs of the State labor force. He discovered that an anticipated expansion may be expected in those areas which already have the largest enrollments and not necessarily the areas where manpower needs are greatest. He also discovered some occupational areas which were seriously neglected in the State's vocational program, especially in the areas of health occupations and certain industrial and technical fields.

A study of Michigan manpower was made by the Battelle Memorial Institute (1966) in which they made an analysis of the characteristics of Michigan's labor force in the next fifteen years. This study was sponsored and supported by the Michigan departments of Labor, Education, and Commerce, and is based upon a socioeconomic model which Battelle developed and then applied to 45 selected occupations. The study had three objectives: 1) to develop and improve methodology for analysis of projected characteristics of the labor force, 2) to provide estimates of the characteristics of Michigan's labor force in 1970, 1975, and 1980, and 3) to serve as manpower guidelines for educational planning in the state of Michigan.

An analysis of factors that affect vocational, technical, and general adult education in Florida was presented in a report prepared by the Florida State Department of Education (1965). The needs of the state for trained manpower were considered in relation to the training capability, and criteria were developed and applied for locating various programs and facilities for vocational-technical education in Florida.

A statewide study was done by the Oregon State System of Higher Education (1967) to develop a dynamic system for inputing data on human and occupational resources for use in developing vocational education programs to meet current and future occupational needs. The objectives of this study were to develop: 1) data-gathering instruments designed to continuously assess human resources, employment opportunities and educational programs, 2) a system for assessing job opportunities which cluster required job skills and mental processes, and 3) manuals of procedure for use by field personnel in administering data-gathering instruments and employing the clustering system. Included in the report are detailed descriptions of instrument development, a bibliography and extensive appendixes containing related information, an instrument analysis, a guide for administering instruments, the instruments, a supplement to instrument utilization, task descriptions, and classification loadings.

A proposed long-range plan for occupational and vocational-technical

education for Rhode Island was developed by Elsbree (1965). The plan deals with secondary, post-secondary, and adult occupational education. It was based upon economic considerations and manpower needs of the state.

Kelly (1967) studied the need for technicians in the state of Michigan; this study was jointly sponsored by the Office of Economic Expansion of the Michigan Department of Commerce and the Division of Vocational Education of the Michigan Department of Education.

Local Needs and Interests Surveys

The number of surveys which have been made by local school districts and larger geographical areas within a state to determine the need for and feasibility of vocational and technical education programs would probably run into the thousands. Some of these studies are very simply done, while others are more elaborate. At least three doctoral dissertations completed during the period 1963 to 1968 were devoted to a county (or larger) area study of needs. Schreiber (1967) did a study of the needs in Camden County, New Jersey; Andrews (1968) studied of the need for vocational education in Jefferson County, Missouri; and Langerman (1968) did a skilled needs survey with implications for vocational-technical education for a community college district in central Iowa.

As a part of their project on the Educational Implications of Automation, the National Education Association (1966) studied procedures and innovations resulting from technological changes in two representative school districts (Quincy, Massachusetts and Wood County, West Virginia). Several generalizations were identified during the two-year study which should be useful as guidelines. They were: 1) the gap between general and vocational education can be bridged, 2) vocational and technical education differ from academic education but need not be inferior to it, 3) effective teaching of basic learning skills is essential, and it must start early in a child's life, 4) technical skills are best taught to mature students, 5) technical education for girls has been lagging, 6) the library, counseling, and guidance assume increasing importance in technical education, 7) involvement of the community and faculty continues to be essential in program planning, 8) the availability of part-time reduces dropout potential, 9) junior colleges are of increasing importance, especially in vocational-technical education, 10) the use of Federal funds is of increasing importance, and 11) the growing complexity of school administration puts a higher premium on competent leadership.

Other Planning Studies

Several rather extensive studies of youth which have implications for program planning in vocational and technical education are currently being undertaken and preliminary reports are already available. Perhaps the best known of studies in this category is the one being done by Flanagan *et al.* (1964) at the University of Pittsburgh, commonly known as Project Talent. Another longitudinal study, this one dealing only with adolescent boys, is being done by Bachman (1967); while this study is concerned primarily with

the problems and needs of adolescent boys, it also concerns itself with the schools as organizations and examines organization variables.

Harris (1965) and Yencso did a study of the current status of technical programs in Michigan community colleges with a view toward determining the feasibility of pretechnical programs in high schools and the better articulation of these high school programs with technical programs in community colleges.

Pierce (1967) did a study of factors associated with participation by Michigan school superintendents in programs authorized under the Vocational Education Act of 1963. The major purpose of the study was to identify some of the variables associated with the decisions of school superintendents to submit applications for funding under the provisions of the Vocational Education Act of 1963. A questionnaire was used with 200 randomly selected public school superintendents, 100 of which had applied for funds while the other half had not applied during the fiscal years 1965 and/or 1966. Returns were received from 71 of the group who applied for funds, and 58 of those who did not apply. Superintendents who applied for funds possessed a slightly higher level of academic preparation, attended regional informational conferences conducted by the State Division of Vocational Education, and were generally more knowledgeable of the provisions of the Act. Most of the superintendents in both groups possessed limited understanding of vocational teacher certification requirements, favored receipt of additional printed guides and guidelines and more consultative assistance from the State Division of Vocational Education, and revealed limited concern over the possibility of increased Federal and /or state control resulting from the Act.

New and Innovative Programs

Although there are many new programs being tested experimentally in various communities throughout the United States, the success of these programs is frequently not being measured objectively and in many cases the programs are not reported in the literature. Consequently, these efforts may not be considered by some to be appropriate in a review of research, but many of the ideas incorporated in these pilot and experimental programs, were gleaned from the research efforts of others and applied to the development of programs aimed at meeting community needs. A number of these programs are described in a publication of the U.S. Department of Health, Education and Welfare (1967) under the caption "New Directions in Vocational Education" with a subtitle "Case Studies in Change."

Benham (1967) describes an experimental program in a small college-oriented suburban area high school (700 students) in Hudson, Ohio where a full four-year prevocational program has completely replaced the general curriculum. Students are given the opportunity to take *either* a straight college-prep program, or the prevocational program (or a combination). The experimental program includes: 1) prevocational exploratory experiences, 2) specific training in a saleable skill, 3) a work-study experience, and 4) a program broad enough for each student to find a renewed interest

in school, which it is hoped, will motivate him to complete his requirements for graduation.

The program described above by Benham was evaluated by Cochran. He found that the program was well accepted by students, dropouts were reduced, vocational students rated job prestige higher than college-prep students, there was a social friction between vocational and college-prep students, and most parents expressed approval.

Procedures and Techniques

Silvern (1967) investigated the feasibility of developing a model to describe the flow of occupational and economic information into the secondary vocational-technical school. The resultant model has as its purpose the modification of occupational curriculums, in keeping with variations in real-life. The unique feature of the model provides for feedback from outside the school or school district directly to the teacher of occupational subjects.

Shibata (1965) developed a program which might be used to determine the vocational education needs in individual local school districts. The program took the form of a three-part questionnaire used to gather data regarding the background characteristics of the community, the characteristics of the local school program and facilities, and the occupational needs and interests of the community. The program was tested in two local school districts and it was recommended that it be applied on a statewide basis to determine Nebraska's need for vocational education.

Also in Nebraska, a model for determining vocational education needs was developed by Cromer (1968). The procedures which he recommended were tested in 20 Nebraska communities during the years 1965-1967. Some major objectives of local community analysis were identified; they are to: 1) evaluate existing vocational courses and determine needed additional offerings, 2) focus attention on the development of quality comprehensive community programs, 3) summarize occupational opportunities within a community, 4) assist local schools in establishing the type of vocational offering which will generate a desirable curriculum balance, 5) determine the need for supplemental education and training or retraining, and 6) supplement local data with area and state data to project a regional picture of employment opportunities. The report includes sections on: 1) philosophy, 2) purpose, 3) objectives, 4) benefits, 5) model, 6) a seven-step outline for determining vocational education needs, 7) determining multi-county vocational education needs and 8) problems in compiling area data. The appendixes contains sample forms for use in a community survey.

Hendrix (1967) constructed an instrument to be used in collecting and evaluating data upon which to base decisions regarding scope and character of vocational programs in individual high schools. He developed the instrumentation needed to collect data which fell into four categories: 1) the vocational education needs of the community and the goals of its people, 2) student educational objectives, desires and needs, 3) space and equipment availability, and 4) special administrative and instructional needs. Accessory

documents were prepared to use in collecting data requested in the primary instrument. Pilot schools were selected and surveys were made using the instruments, after which the instruments were evaluated as to their effectiveness.

Boyle (1965) examined procedures used in planning occupational education programs in ten selected Florida junior colleges. He examined the procedures used in assessing the need for occupational education, in planning courses and curricula to meet the needs and in evaluating ongoing programs of occupational education. He concluded that extensive cooperation and planning between state agencies and individual junior colleges is required and that a state plan for junior colleges would be helpful. He also found that advisory committees had made important contributions in planning occupational education programs and that the climate within which occupational education operated seemed to be related to the attitudes of administrators, faculty and community leaders as reflected in the understanding that these individuals had of the goals, purposes and worth of junior college occupational programs. He recommended that statewide studies of occupational needs be made periodically (every five to ten years) and continuing studies of occupational needs in the areas served by the junior colleges be made to update information provided by the periodic statewide studies. He also recommended studies of selected occupations (job analysis studies), for which training is to be provided and follow-up studies of graduates of occupational programs.

A study by von Schaaf (1966) identified a set of guidelines for establishing (and evaluating) technical and vocational education programs. A basic rationale was constructed to serve the two-fold purpose of establishing a fundamental basis for vocational and technical education and to provide criteria for the assessment of the social forces researched. Guidelines were projected in the areas of organization, curricula, instruction, and guidance. He concluded that the current social forces reflected society's attitude toward the individual and, therefore, the need to include the worth and value of the individual in educational programs and practices was emphasized. It is interesting to note that in the guidelines for vocational and technical education a regional or metropolitan council was recommended for the purpose of organizing the regional program, establishing policy, conducting surveys, and establishing programs for specific groups, including: 1) programs for in-school and out-of-school youth, 2) adult educational programs of general and vocational education, 3) programs with adequate opportunities for women and minority groups, and 4) programs of continuing education for individuals who may wish to continue to upgrade skills and to train for more difficult occupations.

Rogers and Scarborough (1966) conducted a seminar on planning developmental and related programs in occupational education for 25 public school personnel, to stimulate the inititation of innovative programs in occupational education at the local administrative level and to assist these local school personnel in planning such programs.

Lockette (1965) experimented with the "judgmental process" involving

personnel from the New Jersey State Department of Education and state colleges, local teachers, local administrators and lay leaders in a process of personal involvement by which needs for improved and expanded programs of vocational and practical arts education were examined and new programs developed in terms of the specific characteristics of the school community and the projected labor force needs of the state and nation. The program was focused on the process of personal involvement and the interplay of personalities as dynamic interaction takes place, which begins with a vague notion of a conceptualization of a problem (to provide more effectively for the vocational and occupational needs of youth) moves through the more concrete conceptualization of the problem, the focusing of information and data on the problem, to the development and implementation of a program of action. The procedures employed in the experimental use of the judgmental process are described with the use of the Program Evaluation Review Technique (PERT) and on the basis of the investigator's experience he gives, in another PERT chart, the recommended.

McKee (1966) established a technical college in 100 days using the programmed organizational procedures of the PERT system. Through the aid of the PERT planning system, it was determined that there were nine major lines of activities and about 300 events to be accomplished to open the college. A team approach was used whereby the three main administrators would focus attention on a major activity, plan and start its evolution, assign it to a staff member for completion, and then initiate the next activity. The plan was so effective that the college will use the PERT system more extensively in the planning and building of the next campus.

Oakford and Allen (1968) reported a three-year developmental program (started in 1965) to determine the desirability of modular scheduling for comprehensive and vocational schools and to investigate the impact of such scheduling on 18 secondary schools. The Stanford School Scheduling System, a computer program for schedule construction based on course design and student course selection, was developed. Over 250 modular schedules have been produced by this program. Some of the findings were: 1) courses were substantially modified as a result of alternatives provided by modular scheduling, 2) the use of team teaching and large and small group instruction increased, 3) the use of student performance criteria as a basis for advancement increased, 4) space utilization was different, but more space was not required, 5) disciplinary problems increased and later subsided, while attendance increased, 6) there was increased interaction between students and school personnel in all schools excepting one, 7) staff utilization patterns changed to increased responsibilities, but involved less after-hours work, and 8) most students and teachers would not prefer to return to traditional scheduling. The report includes descriptive information of the schools, data tables and data collection forms.

STAFFING

Staffing vocational and technical education programs is one of the most difficult and, during recent years, frustrating problems faced by administrators. The frustration is caused by the fact that vocational and technical programs have expanded at an accelerated rate resulting in a critical imbalance between supply and demand of qualified persons in many areas.

Need for and Recruitment of Staff

Stevenson (1966) utilized a questionnaire to survey each of the state departments of vocational education and 179 teacher training departments throughout the United States. He got a 54 percent return from state departments and a 36 percent response from teacher training departments. On the basis of these data he concluded that, in general, the supply of graduates above the baccalaureate level would fill 50 percent of the demand for vocational education personnel at the state and district levels, assuming that all degree recipients would be available for these vacancies. He concluded there is an extreme shortage of qualified personnel for positions of leadership in vocational education.

Two researches have been done which look to the military services as a source of teachers. Richland and Rosove (1967) explored the feasibility of developing a computerized system to match retiring military personnel to job vacancies in vocational and technical education. They concluded that there are thousands of military retirees who are occupationally and educationally qualified for vocational teaching positions. They considered state certification requirements and other existing procedures to present not insurmountable problems.

Hensel (1967a) investigated enlisted men separating from the military service as a potential source of teachers for vocational and technical schools. Those enlisted men who had thirteen or more years of education prior to military service were the group most interested in vocational and technical teaching service. The percentage of men interested increased consistently as rank increased. About nine percent of the sample of 1,150 men (including men from one Army, one Navy, and one Air Force base) were classified as outstanding teacher prospects for vocational and technical areas. Hensel concluded that the military service offers a potential source for teachers in several fields of vocational and technical education, particularly in the electrical and mechanical fields. Hensel (1967b) surveyed state directors of vocational education to determine the present supply and projected demand for teachers in vocational and technical education at the high school and post-high school levels. Estimated increases in need for high school teachers from 1965 to 1968 were as follows: agriculture, 5.3 percent; business and office education, 28 percent; distributive education, 49.2 percent; home economics, 13.7 percent; and trade and industrial education, 43.1 percent. Estimates of needs for post-high school teachers for this period were agri-

culture, 113 percent; business and office education, 37 percent; distributive education, 73.5 percent; health occupations, 40.2 percent; home economics, 66 percent; technical education, 39.7 percent; and trade and industrial education, 23.2 percent.

The relationship of occupational experience, teaching experience, college training, and technical training to rated effectiveness of vocational electronics teachers was researched by Musgrove (1968). He got biographical data from 210 vocational electronics teachers from eight states and teacher effectiveness ratings were derived from: 1) self-evaluation scales returned by the 210 teachers, 2) teacher rating scales completed by 200 supervisors, and 3) teacher effectiveness scales as perceived by 2,738 students. Although the teacher self-ratings indicated a positive relationship between occupational experience and teacher effectiveness, the supervisor and student ratings showed no significant relationship. While the supervisor ratings showed a positive relationship between the amount of teaching experience and rated teacher effectiveness, the student ratings and the teacher self-ratings indicated no significant relationship. Although the student ratings and teacher self-ratings indicated a negative relationship between the amount of college training and teacher effectiveness, the supervisor ratings showed no significant relationship. Supervisor ratings, student ratings and teacher self-ratings obtained in this study showed no significant relationship between the amount of electronics technical training and subsequent rated teacher effectiveness.

Greer (1967) was concerned with: 1) existing practice in regard to qualifications or standards required for initial employment; 2) differences in requirements between teachers of related subjects and those in subject matter areas directly related to a technical specialty; 3) the in-service requirements for retention and promotion; 4) emerging trends in the development of uniform standards; and 5) implications for future practice in determining and setting standards. He concluded that there are no universally accepted definitions or standards relative to vocational education in the United States, and that certification standards lack uniformity across the country.

Messerschmidt (1967) completed a study to determine the practices used by community colleges in the state of Michigan to recruit, hire, and prepare part-time instructors in vocational-technical education, and to compare certain attitudes of part-time vocational-technical instructors with full-time vocational-technical instructors. Results showed that: 1) primary source of part-time instructors was local business and industry, 2) attempts to use retired industrial and military personnel were not successful, 3) the supply of and demand for part-time instructors appeared to be growing at similar rates, and 4) most administrators relied on department chairmen, other administrators and faculty to assist in the selection of part-time instructors.

Many states have gathered information regarding the supply and demand of vocational and technical teachers and a number of studies have been done which deal with the supply and demand within a particular field

such as home economics or agricultural education, but such studies are not within the purview of this review.

Administrative and Supervisory Leadership in Vocational Education

With the expanding and changing role of state divisions of vocational education, the need on this level for persons capable of giving dynamic leadership becomes more critical. Policies, practices and requirements of professional personnel within state divisions of vocational education were studied by Rice (1968) with a view toward developing in-service and pre-service training programs and possibly the development of simulation and other training materials to assist state divisions of vocational education in upgrading professional personnel.

Magisos (1968) studied relationships between change orientation of state supervisors of vocational education and selected individual intra-organizational, and extra-organizational factors. To determine the perception of role by state supervisors, an instrument (developed in the 1966 Rice study, previously cited) was used to measure dynamic-tractive supervisory behaviors. A dynamic-tractive differential index was computed for each participant and this served as the measurement of the dependent variable with which 63 independent variables were tested. More dynamic supervisors were found to have significantly more formal education, more college degrees, more returns to college after entering professional education and a higher perception of their own salaries in relation to the salaries of others throughout the nation in the same job category. The few significant variables were educational preparation factors which suggested implications for pre-service education, in-service education, educational leave policy, and personnel selection policy.

Wenrich and Ollenburger (1963) surveyed principals of larger high schools in Michigan to determine the kinds of Federal and state assistance they would consider most helpful in developing and/or operating special programs and services for employment-bound youth. Responses were received from 98.4 percent of the principals contacted. A majority of the principals felt that they did not have time to give leadership to the programs for employment-bound youth, and nearly three-fourths of them felt their programs could be improved if funds were made available to provide an extra assistant to give this leadership.

During the summer of 1966, the University of Maryland sponsored three leadership development seminars on vocational-technical education, each of two-week duration. These seminars were designed to disseminate, among selected Federal, state and local educators, information concerning vocational education programs and procedures and to provide opportunities for participants to observe and practice specific leadership skills. Green *et al.* (1966) prepared reports on these three leadership development seminars. The University of Maryland also operated a seminar on program planning, budgeting and evaluation for Federal and state vocational education. This leadership development seminar was reported by Smith and Connolly

(1967) and the report includes guides and models.

Smith (1966), on the basis of his experience and experimentation in California, defines the role of the state department of education for leadership development. He concludes that true leadership in vocational education at the state department level will not permit operational involvement. He claims that state department personnel, to be true leaders, must revolutionize their techniques and practices. State department personnel must face up to the fact that their fascination with operational involvement often produces "callouses on our mental antennae." He states that state department personnel must "back away from the chores of operation and contemplate from a distance the programs we lead. We can safely entrust to emerging leaders the details that smother our inventiveness, our enthusiasm and our inspiration."

Two excellent studies have been done which were intended to define administrative roles in vocational and technical education on the local and intermediate district level. Law (1966) did a study of the duties and responsibilities of public school administrators as they affect the initiation, development and conduct of federally aided programs in occupational education in New York State. One of its primary purposes was to identify the administrative positions that may be involved in vocational and technical school education and to further identify the duties and responsibilities generally associated with each position. He also obtained the views and recommendations of vocational and general school administrators with respect to the need for special preparation and training of persons whose policies and actions have a bearing on the initiation, development and conduct of programs in vocational and technical education. He concluded that a wide variety of administrative positions are involved in duties and responsibilities that relate to the administration of vocational education, and that many administrative functions are carried out by persons who do not have experience in vocational school work nor professional training in the administration of vocational education. Furthermore, he found that persons preparing to become general school administrators have little opportunity to obtain professional instruction relative to vocational school work in New York State colleges and universities. His recommendations included: 1) graduate schools of education need to provide programs relative to the administration of occupational education, 2) workshops and institutes for combined groups of occupational and general school administrators are desirable, and 3) local boards of education need to define the duties and responsibilities and establish policies with respect to status of local administrators of occupational education.

Stanger (1967) did an attitudinal study concerning the responsibilities of the intermediate level director of vocational education in California. The purpose of the study was to survey the attitudes of selected groups of vocational education leaders in order to determine their perceptions of the functions of the county vocational education director in California. These functions were limited to the service responsibilities of the position. At the time of this survey the position of director of vocational education in the of-

fice of the county superintendent of schools was relatively new; only 26 counties were employing persons in this staff position. Item analysis of the combined-group ratings of 73 functions revealed a strong pattern of consensus within and among groups. Rank-order listings of the importance of items according to weighted scores revealed a preponderance of top-rated functions in the area of administrative and executive functions. Next in importance were functions concerned with the instructional program and with professional improvement.

The qualifications and professional responsibilities of local directors of vocational education in the state of Utah were investigated by Edmunds (1967); he also gathered data from state directors of vocational education in other states and teacher training institutions throughout the nation. Among the duties of directors were: 1) budgeting, 2) reporting, 3) directing work-study and adult programs, 4) contacting employers and employment service, 5) recommending advisory committee appointments, 6) holding conferences, 7) conducting in-service training programs, 8) maintaining public relations, and 9) recommending facility improvement. He recommended that director training programs be developed and certification criteria be established.

Two experimental programs for the preparation of persons for leadership roles in administration of vocational and technical education were reported. Law (1967) reported on a program in New York State to staff new area centers of technology and education. A total of 42 people who had been hired to fill administrative posts in these centers were trained over a three-year period. The program consisted of two phases. The first phase was a four-month period of instruction in the following areas: 1) the administration and supervision of vocational education, 2) occupational analysis and curriculum development, 3) current and projected concepts of vocational education, 4) laws, regulations, and policies affecting vocational programs, 5) planning plants and facilities for area vocational education progra[illegible]nd 6) financial organization and fiscal management of area vocationa[illegible]grams. The second phase of the project involved an eight-month field-directed study program, the first two months of which were devoted to a tightly planned instruction and observation program where the trainees participated as a class, followed by six months of on-the-job experience in an internship situation under the supervision of an itinerant coordinator.

Wenrich and Hodges (1966) reported on the first year of operation of an experimental program for the identification, selection and development of persons for leadership roles in the administration of vocational and technical education. Local school administrators in Michigan were invited to nominate persons for the program; of the 254 nominated, 166 candidates applied, 99 of which met the basic requirements of age, work experience, teaching experience and educational background; these persons were then tested and interviewed. From this group 40 candidates were selected. A combination of matching and random methods was used to establish two groups of 20 each. Group A was given the full treatment, which consisted of an eight-week intensive summer workshop followed by a year-long internship,

while Group B participated in the internship only. On the basis of this experience, it was recommended that the program be continued and that a follow-up study be made of the persons who completed the program to determine if there was any difference between Group A and Group B in terms of their performance in leadership roles and also to validate the selection criteria used in this experimental project. The follow-up study was done, and Wenrich *et al.* (1968) reported the results. The combination of the eight-week summer workshop and the internship phase was definitely superior to the internship phase alone. Because of the design of the study it was impossible to separate the evaluation of the training program from the selection process; but taken together, the selection process plus the training program produced impressive gains in leadership behavior.

The preparation of administrators for vocational and technical education through an advanced degree program was the subject of investigation by Schaefer (1966). He assembled persons from a number of different disciplines and asked them to help describe the "new breed" of vocational administrator with a view toward developing a graduate program for the preparation of administrators in this field. He concluded that the leader in an administrative role must be knowledgeable about counseling and guidance, labor economics, social psychology and group dynamics, the sociology of work, industry and minority groups, labor-management relations, industrial organization, industrial training, facilities and concepts of vocational education.

The General School Administrator

Vocational and technical education on the Federal, state and local level is a part of the larger system of public education. The development of vocational education in any state or in any local school district is determined to a large extent by the attitudes, values, education and work experience of the general school administrators with whom the vocational education administrator must work. Probably the most significant research in this area has been done at the University of Nebraska. Krepel (1967) prepared a descriptive analysis of the relationship which exists between Nebraska administrators and vocational education. The description included: 1) a data sheet of personal and demographic information; 2) an investigation of the perceived role of public school administrators regarding leadership expectations with reference to providing vocational and technical education in public schools; 3) an assessment of the attitudes of public school administrators toward vocational education; and 4) an assessment of the levels of cognition of public school administrators regarding factual aspects of vocational and technical education. Data were obtained from 51 superintendents and 51 principals selected randomly from three size categories of Nebraska schools. Personal and professional information was obtained by questionnaire, and attitudinal and cognitive tests were administered. He recommended that since the attitudes of administrators toward vocational education tend to be lower than toward academic areas that training materials related to the values of vocational education be

prepared and used in the preparation programs for administrators and that special attention be given small school administrators in order to raise their level of cognition as related to vocational and technical education. He further recommended that training materials should be prepared to clarify the administrator's role as a leader in the initiation of new educational programs.

Another study done at the University of Nebraska by Colgan (1967) was designed to develop an objective examination in order to measure the knowledge of superintendents and principals in the area of vocational education needs and programs. He discovered that academic preparation is available on a very limited basis in the area of vocational and technical education needs and programs and that administrators want to know more about these matters. He found that superintendents of large and medium sized schools scored significantly higher on the test than administrators of small schools. He estimated the reliability of the instrument to be .79 and suggested that test items be added to raise the reliability.

Recognizing the fact that the general school administrator frequently has an inadequate background for effective leadership of vocational-technical programs, Sybouts (1968) developed a training program through the use of simulated materials (in-basket technique). He used these materials with an experimental group of 16 administrators and then compared their achievement with the control group which received no instruction and with another experimental group which received the same instruction as the first group but the instruction was presented in a more traditional way by a specialist in vocational education. He tested the attitudes, knowledge and role expectations of the administrators in the three groups both before and after the treatment. He found that both the experimental groups—those who had been given the instruction through the use of simulated materials and those instructed through the more traditional methods—had acquired a great deal more information than the control group (no instruction). But when it comes to changes in attitude, the two experimental groups were strikingly different. Those in the group which was given the instruction in a traditional manner were repeatedly "told" of the importance of vocational education but their attitudes were not significantly affected as revealed in test scores. But changes in attitude patterns did occur in the group which used the simulated materials. The researcher concluded that there is good reason to believe that simulation activities can be very useful in helping school administrators to acquire a better informed and more judicious point of view regarding vocational education.

The role of the high school principal in the development of vocational education in the comprehensive high school was the subject of an investigation done by the Nevada Occupational Research Unit (1968). The position taken was that the offerings of most high schools are dominated by the needs of college-bound youth and that if this imbalance is to be improved, the general image of vocational education must be improved. It was felt that this image within any individual high school can be changed by the principal's leadership and attitude in his insistence that vocational

education develop a rightful place in the complete organization of the school. A caution was noted: this change will cause both internal and external conflicts which will require more of the principal than nominal leadership as his actual leadership may be challenged. Suggestions and guidelines were offered to the principal for changing attitudes and administering the program.

A study of the attitudes of selected Tennessee high school principals and superintendents toward the role of vocational education in the high school was done by Phillips (1967). He first identified principles relative to vocational education and principles relative to industrial arts. He found that there was a tendency on the part of school administrators to interchange the principles of vocational education and those of industrial arts. The administrators indicated that vocational courses should offer benefits to the academically gifted as well as furnish activities for slow learners. Also, vocational education should be general in nature and, like industrial arts, should assume the role of general education rather than specialized specific occupational training. Although the administrators expressed support of the principles of both vocational education and industrial arts education, programs in the high schools were found to be in harmony only with the principles of vocational education.

FINANCING AND FACILITIES PLANNING

Relatively little research has been done on financing and facilities planning for vocational and technical education. During recent years there has been considerable interest in and a number of studies have been done of the relationship of cost and returns of vocational and technical education. Since research of this kind will be included in a separate review on the economics of vocational education, they will not be included here.

Financing

A study of the role of the Federal government in financing public vocational education was done by Penn (1968). He found that: 1) the primary impetus behind initial Federal financial aid to public vocational education was a mandate by the American people for a more practical and useful educational system, 2) cordial and effective relationships existed between Federal and state and local agencies responsible for the administration of programs under provisions of Federal vocational education acts, and 3) the states showed a high degree of individuality in their spending patterns and trends relative to public vocational education programs.

Davie and Patterson (1966) investigated inter-governmental fiscal relations as they pertain to vocational education. They attempted to answer two basic questions: 1) can the procedures used to allot Federal vocational

education funds among the states be improved, and 2) has Federal aid stimulated state-local expenditures for vocational education? In answer to the first question, it was felt that significant changes and allotment procedures can be made which will better meet national education objectives. The inclusion of an equalization provision in the allotment procedures as required by the Vocational Education Act of 1963 was perceived as a major innovation. The answer to the second question was a qualified negative response. The study indicated that no significant relationship existed between changes in Federal expenditures for vocational education and changes in state-local expenditures.

It is generally recognized that the cost of most vocational and technical education programs is higher than the cost of most academic programs. One justification frequently used for special financial support for vocational education has been this differential in costs. Anderson (1966) did a study to find the relationship of the unit costs of special vocational and technical curricula in comprehensive junior colleges to the unit costs of liberal arts and transfer curricula. He found that the majority of the vocational and technical curricula cost more per student than the transfer curricula in the same institution. The average cost ratios found for eight types of vocational and technical curricula are as follows: applied arts, 1.76; engineering technologies, 1.95; business and office occupations, .95; health and medical occupations, 1.49; industrial technical occupations, 1.52; dietetics and home economics occupations, 1.21; and public service occupations, .96. This study included only junior colleges which had been in operation for a minimum of five years and, therefore, does not reflect the "start up" costs of initiating and developing vocational and technical programs.

Wenrich and VanDyke (1963) studied the attitudes of local administrators regarding the financing of vocational education in Michigan. This was a follow-up of a study which had been done two years earlier to determine: 1) the extent to which local school administrators' current opinions agreed or disagreed with their earlier opinions, and 2) the relationship of stated opinions to probable actions. The general conclusion was that the use made of state and Federal funds for vocational education tended to maintain and support ongoing programs rather than promote and further develop programs. It was recommended that programs should be reimbursed at the full rate for a five-year period and thereafter state and Federal support withdrawn gradually (over a three-year period). It was further recommended that funds be used for the promotion and further development of services not now provided by local school districts including new instructional services, occupational counseling, placement and follow-up services, professional growth services for teachers, supervisors and administrators, administrative and supervisory services and the purchase of equipment.

An analysis of expenditures for vocational-technical education programs has been done as a part of Swanson's (1967) *Nation-Wide Study of the Administration of Vocational-Technical Education at the State Level.* One conclusion reached was that there is considerable evidence that of all

funds expended for vocational and technical education, a very large percentage is used at the point of operation, the local school program. This is particularly true of Federal funds where 92% of all these funds were used for either school construction, program equipment, or program operation.

Facilities Planning

The Wisconsin State Board of Vocational, Technical and Adult Education (1964) has developed guidelines for facility planning of vocational and technical schools. Specific information, useful to local school district personnel in planning such facilities, is provided.

Pittsburgh, Pennsylvania is committed to a plan to build five super high schools, each to accommodate 5,000 to 6,000 students and each of the "great high schools" is planned to include learning opportunities for all students in the Occupational, Vocational and Technical (OVT) Division. Olson (1968) describes the design of the theoretical model which was used in planning these programs and facilities and the environmental system that resulted from this model. The model is now being used in planning OVT facilities for the great high schools.

EVALUATING

Vocational and technical education is being evaluated constantly by two groups in particular—the product and the employer of the product—but a more formal type of evaluation is a function of administration. Many local administrators have used a variety of systematic procedures for the purpose of evaluating their vocational and technical programs. It is not within the purview of this review to report on such local evaluative studies; instead, researches having to do with techniques and procedures will be reported and a selected sample of national, regional, and state evaluative studies will also be reviewed.

Since program evaluation is frequently an integral part of program planning, much of the researches reported in the section on "Program Planning" had as one of their purposes the evaluation of existing programs.

Techniques and Criteria

Hamlin (1967), an authority on the use of lay advisory committees, advocates their use in the evaluation of vocational and technical programs. He outlined a procedure for the effective use of citizen evaluation committees.

Byram (1967) studied evaluation systems for local programs of vocational-technical education. His purpose was to make the maximum use of local personnel, local resources, consultant leadership, and related professional assistants in the further development and trial of a system of evaluation. Ten local school districts in Michigan were involved in the project. Byram and McKinney (1968) have produced a manual on evaluation of local vocational

education programs for administrators, teachers, and citizens, which is based upon Byram's earlier research.

The development and testing of an evaluation model for vocational pilot programs was done by Tuckman (1967). The model consisted of procedures for obtaining immediate information regarding the degree to which a pilot program achieves its stated objectives. He tested this model by using it to evaluate two ongoing pilot programs. He included in the appendices of the report the "Manual for Evaluating Educational Programs—the CHECK Technique."

Sharp (1966), through the examination of selected follow-up studies of graduates of vocational education programs and other source materials having to do with follow-up studies, concluded that such studies were useful tools in the evaluation of training programs. The researcher found serious gaps in follow-up information, particularly at the post-high school level for those trained in technical institutes and junior colleges. It was recommended that what is needed is a systematic nationwide coverage for all levels of vocational training and for all vocational education programs. The researcher felt that those who plan vocational education policies should have available to them data on the employment outcomes. Follow-up studies were recommended for the purpose of matching vocational graduates in a given year with nonvocational graduates; it was also recommended that follow-up studies be conducted at different times to determine the effect of training over a period of time.

Guidelines and criteria for the evaluation of the overall program of vocational-technical schools were developed by the Connecticut State Department of Education (1966). Philosophy, objectives, and check lists were developed for evaluating the following areas—administration, professional staff, trade program, school plant, related departments, audio-visual services, school library, cafeteria, social studies and English programs, health services, and the student activity program.

The Program Evaluation and Review Technique (PERT) was adapted by Pierce (1967) for use in Swanson's (1967) *Nation-Wide Study of the Administration of Vocational-Technical Education at the State Level.*

Frequently used as a method of evaluating programs is to determine the extent to which those students who complete a vocational program are successful in finding employment. Harris (1967) developed a model for a statewide storage and retrieval system for reporting job placement data for persons trained in industrial education programs in the California public schools. The system may stand alone or operate in conjunction with other electronic data processing projects.

National Evaluations

Two evaluative studies of high school programs involving national samples have been completed. The first of these by Eninger (1965) concerned itself with the product of the high school level vocational education programs in the United States. The investigator surveyed trade and industrial graduates selected from 50 vocational schools and 50 com-

prehensive high schools and then compared their careers with those of 3,500 general course graduates from the same comprehensive schools. It was shown that after two, six and eleven years out of school, the vocational graduates, when compared with general course graduates who did not go to college, had greater accumulated earnings, greater employment security, greater job satisfaction, and comparable job mobility. Furthermore, the vocational course graduates found full-time jobs substantially sooner than the general course graduates. A comparison of vocational and academic graduates without a college education revealed no difference in conversational interests, leisure-time activities, and affiliation with community organizations. Fifteen percent of the vocational graduates went to college and 42 percent reported having had some type of formal post-high school education.

More recently Eninger (1968) has evaluated the processes of high school level vocational education in the United States. He found that the relatedness of the first job to the occupation studied is the keystone criterion variable because those who enter occupations the same as or highly related to the occupation studied do better on the average than those who entered unrelated occupations. The most fruitful areas for school efforts to improve their percentage of graduates placed into the field for which trained are: 1) improvement in school placement services, and 2) improvement of the percentage of "recommendable" graduates by matching the capabilities of the course applicant with the requirements for course success and by transfer of students who cannot meet course requirements to a more suitable course or early remedial efforts.

Another large-scale study aimed at assessing vocational-secondary school programs and determining the extent to which they are meeting the needs of the students and the communities was conducted by Kaufman *et al.* (1967). This study also compared the vocational and technical education curriculums in the secondary school with other high school offerings that "feed into the employment stream" (i.e., college preparatory curriculum graduates who do not go on to college and graduates from the general curriculum). Nine communities in Pennsylvania, New Jersey, and Ohio were selected on the basis of size, labor force composition, type and quality of vocational programs, and geographic accessibility. Schools were examined through an on-site evaluation of their vocational programs by a team of educators, including specialists in the several vocational areas, guidance experts, and representatives from labor and management. In all, 25 schools were visited and evaluated; 658 employers and 90 union officials were interviewed. A total of 5,181 graduate interviews were obtained including approximately 2,000 vocational graduates and the same number of general graduates, with the remainder being college preparatory graduates. The investigators concluded that: 1) small communities (25,000-100,000) had the best overall vocational programs both in quality and in the proportion of students enrolled, 2) weaknesses found were failure to develop programs for those students who could not benefit by present offerings, poor guidance programs, and insufficient use of advisory committees, 3) few advantages were

found in the job experiences of graduates of any one of the three curcicula—vocational, general, and academic, 4) the interviews of graduates from the two types of schools—comprehensive and vocational—did not support the claims frequently made, that is, that graduates of vocational schools are better prepared or more successful in their first jobs and that comprehensive schools lead to greater acceptance among students from different curricula. The researches also found that both Negro and white vocational graduates thought they were better prepared for employment than academic and general curricula graduates. For example, Negro males who graduated from a vocational curriculum perceived that they were relatively "better off" than the Negro graduates of other curricula.

McCleary (1967) did a study to determine how high schools can better prepare students for the vocational demands of a technological society. A total of 174 districts serving cities of 50,000 or more population throughout the United States returned a survey instrument. Tentative conclusions were drawn and submitted to a jury comprised of 23 college professors, vocational education specialists, and representatives of business and industry. He found the following inadequacies in present vocational programs: 1) strong reliance on subjective criteria for screening of vocational students, 2) lack of district placement services, 3) lack of follow-up provisions, 4) low proportion of students in vocational education programs, and 5) limited number of courses offered in a majority of programs. He concluded that in high school vocational programs: 1) the range of opportunity and choices open to students is limited, particularly for low-ability students, 2) the number of students enrolled is unrealistically low, 3) systems developed to screen students for admission to courses are fragmentary in use and based on too few criteria, 4) opportunities for on-the-job work experience and employment in field of training after completion of courses generally do not comply with present day needs, 5) agreement and/or sustaining evidence is lacking to support any one mode of organization, 6) community agencies and lay individuals are used in a variety of ways and contribute to programs' success, and 7) programs depend heavily upon special funds.

Other Evaluative Studies

An in-depth study was conducted by Kaufman and Lewis (1968) in three selected cities to determine recommendations for improvement of vocational education. Some of the principal findings were: 1) most students entered the world of work without specialized occupational training, 2) enrollment in vocational programs was higher when students were taught in comprehensive schools, 3) an imbalance existed between high school enrollments in vocational programs and local labor market composition, 4) vocational education in the smaller cities was altered so as to more closely match the needs of the local labor market, 5) the majority of the graduates did not recall being reached by counselors, 6) vocational graduates had greater employment stability, received more rapid increases in earnings, and received higher average monthly earnings, 7) extra earnings of the vocational graduates justified the cost of their education, and 8) less than one-half of the male

graduates obtained jobs that were directly related to their training. The researchers recommended that: 1) programs in broad general skills with general applications be developed, 2) programs be aimed at the large proportion of students who see little relevance in either vocational or academic curricula, 3) vocational education bring meaning and interest to the learning experience, 4) opportunity be provided for employment exploration and familiarization as an integral part of the curriculum, and 5) vocational guidance be expanded.

Ripple (1968) evaluated adult education programs in selected schools in four states. The study was designed to determine how effectively the educational and job preparation needs of the individual and the community were being met. He found that adult educators are reluctant to be daring and innovative in preparing programs that would effectively prepare adults for salable positions and that adult educators do not seek or solicit the aid and assistance of employment service specialists in planning programs to meet the educational and training needs of adults. Finally, he found that guidance and counseling services offered by adult educators to participants in educational and training programs are being relegated to a form of lip service and are not identifying people in need of salable skills.

George Peabody College for Teachers (1966) evaluated the state of Utah using a 15-member team from 12 states. Team members, working with the staff of the department of public instruction, collected data from the state offices and visited selected schools throughout the state. The study was concerned with an evaluation of goals, programs and policies, rather than the details of local operations. It was aimed at generating plans for a long-range program of development in all areas including organization and administration. Major recommendations for each of the 14 areas studied were presented.

Probably one of the most extensive statewide evaluations of the total program of vocational education was done in Michigan. The study was directed by Borosage *et al.* (1963) and extended over a four-year period involving hundreds of educators and laymen. It was an inter-university cooperative effort, one part of which was concerned with problems of organization and administration.

Welsh (1968) conducted a study to ascertain and compare input factors such as expenditure and enrollment with output such as graduates, placement, and job success of vocational education programs in Missouri in relation to the manpower needs of that state. He concluded that there is a serious imbalance between funds expended for vocational education and the manpower needs of the state, and that the state is a defaulting partner in financing vocational education in Missouri, since it provides only seven cents of every dollar spent for vocational education in the state; thirty-one cents comes from the Federal government and sixty-two cents from local funds. He further concluded that a greater percentage of secondary students should be directed toward vocational training and that vocational educators are not giving proper emphasis to the training of males.

The Minnesota Research Coordinating Unit in Occupational Education

(1968) studied the effect of the area vocational-technical schools in the state of Minnesota. The study was requested by the State Board for Vocational Education to determine the present and future needs and allocation of resources to meet these needs through the area vocational-technical (post-secondary) schools. The study also recommended locations for new area vocational-technical schools.

Sanders (1967) compared two methods of preparing youth for employment: cooperative occupational education and preparatory vocational-technical school training. He concluded that the graduates of both types of programs tend to be more similar than different with respect to intelligence, percentile rank, class rank, and grade point average. He found that cooperative occupational education graduates had earned approximately forty-four cents per hour less on their supervised jobs than did vocational-technical school graduates on their unsupervised jobs. While a larger percentage of the cooperative occupational education graduates obtained their first full-time job in the occupation for which they were trained, or a closely related one, more vocational-technical school graduates were currently working in the same or closely related occupations, and vocational-technical school graduates were earning a higher average current salary than cooperative occupational education graduates.

The Alaskan systems of vocational and technical education were appraised by the Alaska Department of Education (1968) through a contract with a firm which provides corporate management services. A group of 18 resource persons and consultants with a wide range of backgrounds participated in the appraisal and formulation of recommendations. They recommended a "major overhaul" of the Alaskan vocational education system, the appointment of a business and industry committee comprised of members from business, labor, ethnic groups, educators, homemakers, and government which would be charged with the responsibility "of developing and implementing a coordinated business and technical education system." They also recommended the creation of a Research Coordinating Unit for Vocational-Technical Education.

In 1963 the North Carolina schools introduced a ninth grade course which provided occupational information as a basis for vocational planning. After four years, 366 teachers and administrators who had at least one year's experience with the program were surveyed by questionnaires, with an 80 percent response. Clary (1967) concluded that such a course is necessary and that both boys and girls should take it. More study is needed to determine if the course should be required or elective.

The Detroit Public Schools evaluated a project designed to provide in-school work experiences for fourteen and fifteen-year-old junior high school students for the purpose of: 1) encouraging them to remain in school after the age of sixteen, 2) improving their school attendance and scholastic achievement, 3) providing opportunities for growth in the ability to work and explore aspects of the world of work, and 4) providing income, sound work habits, work training, and salable skills for pupils from low-income families. Data on 140 pupils who had participated in the program through-

out the fall term of 1966 were compared with data from the fall term of 1965. Also a follow-up study was conducted on 42 students who had participated in the project and went on to senior high school. There were no statistically significant changes in absences or tardiness or in academic grades. Case studies indicated that individual students did show progress in academic performance, in attitude toward school, and in social behavior. In general, the program met only the objectives of providing earned financial assistance to needy pupils and providing pupils with supervised work experience which might better prepare them for entry into the world of work.

SCHOOL-COMMUNITY RELATIONS

The need for a closer working relationship between the world of work and the schools is generally recognized. The school administrator, in order to operate an effective vocational-technical program, must have one foot firmly planted in the community and the other in the schools. From the time occupational education first became a part of the public school program, vocational administrators have looked toward industry for counsel and advice concerning the development and content of vocational offerings. All too frequently this relationship with business and industry has been limited to a rather ineffectual use of advisory committees.

The most extensive study of industry participation and involvement in vocational and technical education programs was done by Burt (1967). It is impossible to adequately treat this extensive work within the limitations of this review. The investigator found that there was general unanimity among educators and industry leaders regarding the desirability and mutual benefits to be derived through cooperative effort in the development and conduct of the vocational and technical education program offerings of local schools and school systems. Burt points out that while the literature about industry-education cooperation recommends the use of advisory committees, it is concerned almost entirely with the use of formally organized advisory committees to achieve the desired cooperative participation of industry; furthermore, there is only an occasional reference to the utilization of specially assigned school staff for industry-liaison purposes, and hardly any attention to the fact that cooperation may be effected through informal arrangement between industry and school representatives. He then lists and discusses the major services provided by industry for vocational and technical education programs. In the last section of the report, the investigator presents the organizational structures and instrumentalities utilized by both educators and industrialists in their efforts to achieve local industry-education cooperation. Data for the study were obtained over a 16-month period during which time the researcher visited many communities throughout the United States and talked with leaders in education and industry and

met with advisory committees. The report concludes with many practical suggestions and case studies.

The organization and effective use of advisory committees was also studied by King (1965). King felt that education and industry must share the responsibility of training the work force vital to the nation's economy and that while advisory committees have been useful in meeting this responsibility on the state and national levels, there is a need for more extensive and effective use of such committees on the local level. Guidelines for the effective utilization of both general advisory committees and craft or occupational advisory committees are presented.

Carlson (1967) did a study of the functions and activities of lay advisory committees for selected junior college vocational programs. His purpose was to identify functions of lay advisory committees, to discover the extent to which the members of such committees judged such functions to be achieved, and to determine the relationship of selected committee activities and member characteristics to member judgments of achievement. One of his conclusions was that when appointing lay advisory committees, junior college administrators should consider "as many favorable member characteristics as prudent investigation will allow." He also concluded that committees should be encouraged to evaluate their services on the basis of their goals and that clear lines of communication between the college and lay committees should be maintained at all times.

A study was completed by Bessire (1965) to determine the extent to which the vocational training program in a community college in California had been responsive to the occupational training needs of its community and to the expressed vocational interests of its students. The investigator found that even though the college was concerned about satisfying the training demands of its community and the interests of its students, it had done so only to a limited degree. A principal recommendation was that additional administrative leadership be provided to insure a more systematic approach to curriculum development and to maintain a closer relationship with employers in the community. McGowan (1965), in an effort to establish more meaningful relationships between business, industry, and the public schools, surveyed nine major employers in California to gather data concerning entry level jobs for which it was difficult to find employees. He included in his report suggestions for improving vocational education through involvement of business, industry, and the schools. He recommended that there be set up clearing houses for vocational information and materials which might be used for both training and guidance purposes; and further, that there be established a vocational education council for each county consisting of representatives from business, industry, and labor.

RESEARCH

Administrators of vocational and technical education and persons

interested in research in this field will be interested in reviews of certain facets of vocational and technical education, some of which were not dealt with in this review, and in others only lightly. For example, Warmbrod (1968) has done a *Review and Synthesis of Research on the Economics of Vocational-Technical Education.* This should be of interest to anyone concerned about problems of organization and administration. Other reviews in this series are to be prepared and published by The Center for Research and Development in Vocational and Technical Education at The Ohio State University in the following areas: "Curriculum Development in Vocational Education," "Transition from School to Work; Problems of the Young Worker," "Utilization and Effectiveness of Vocational Education Instruction Programs as Measured by Initial Employment of Graduates," and "Supervision and Administration of Directed Work Experience and Part-Time Work-Study Programs."

Lee and Hamlin (1968) reviewed research in organization and administration of vocational, technical, and practical arts education, and Moss (1965) reviewed research in the administration and supervision of industrial education. Moss (1967) also reviewed research in vocational-technical teacher education in which he interpreted the research done since 1962 and suggested some major problems which need to be researched.

The *Journal of Industrial Teacher Education-Fall Issue,* edited by Moss (1968), was devoted to Research Policies for Vocational and Practical Arts Education with a series of articles by researchers and practitioners. Also included is a statement of the Research Policy of the American Vocational Association.

Administration of Research

The research coordinating units for occupational education which have been established in most of the states have done a great deal to organize and promote the development of research efforts in their respective states. The Michigan Research Coordinating Unit conducted a survey to determine the research and development needs in the area of vocational and technical education in Michigan. Pucel (1966) identified educators in Minnesota who are interested in conducting or receiving training for research in occupational education. He also identified administrators who have supportive attitudes toward their staffs' participation in occupational education research. About 54 percent of the administrators surveyed had a supportive attitude. Moss (1967), of the Minnesota Research Coordinating Unit, sponsored a regional cooperative research and development conference where representatives from five states chose the project, "Developing the Economic, Sociological, and Psychological Criteria for Evaluating the Success of Vocational Education Programs," as a cooperative venture; the conference also developed a list of 27 other priority problems. Later Moss (1968) developed a paper dealing with the evaluation of occupational education programs in which he described some research approaches to evaluation.

Christensen (1966) held a national vocational-technical education

seminar on the development and coordination of research by state research coordinating units; the purpose of the five-day seminar was to assist research coordinating unit personnel and other educational leaders to fulfill their roles in planning and conducting comprehensive state programs of research and development.

Taylor (1965) reported on a national conference held in Columbus, Ohio, in the spring of 1965, dealing with the administration of research in vocational education. The purpose of the seminar was to improve the quality and quantity of research and development in state programs of vocational and technical education.

Needed Research

A study was done by Courtney (1966) to identify a starting point for research efforts in Wisconsin's vocational and technical education system. The directors of the 64 schools offering vocational and technical programs in the state ranked the components in 14 categories relating to the broad areas of occupational opportunities, human resources, and educational resources. The following were some of the components which ranked high and which have particular significance for administration: 1) occupations for which vocational and technical education programs should be made available, 2) competencies needed for successful entry, persistence, and advancement, 3) factors affecting motivation of the socioeconomically handicapped to pursue training for gainful employment, 4) improvement of community attitudes toward vocational education as preparation for employment, 5) factors which affect decisions to move and seek employment in new situations, 6) curricula for new and emerging occupational fields, 7) optimum mix of theory and practice, 8) sources of personnel appropriate to specific staffing needs, 9) effective methods of organizing, administering, and supervising programs of vocational education, 10) effective vocational guidance and counseling procedures, 11) facilities and equipment necessary to prepare persons to enter and advance in various occupations.

Miller (1967) used a technical education research planning conference of business, industry, government, and education representatives as a research and development model to identify some of the critical problems which seem to be impeding the growth of technical education and to suggest research and development priorities for a more unified national research effort toward solutions. Some activities considered worthy of research were: 1) identifying factors relating to the career choice of technical teachers, 2) recruiting technical teachers from industry, 3) developing programs to meet potential technical teacher training needs, 4) developing a teacher associate program, 5) analyzing the activities of technical teachers, 6) developing an in-service internship program, 7) forming a cooperative work experience team, 8) using video tape for in-service training, 9) testing the effectiveness of teacher participation in professional activities, and 10) determining employment criteria for technical education teachers.

Bertolaet (1966) reported on a national conference where problem areas relating to vocational education administration were identified. They were:

1) community cooperation for manpower development, 2) preparation for the world of work—what business and industry want from vocational education and what the schools should do, 3) vocational education—partner in labor development, and 4) vocational preparation for inner-city youth. It was felt that within these general areas lies a number of researchable problems.

Moss (1964) conducted a study in order to obtain a current priority of problems in trade and technical education in Minnesota suitable for guiding potential investigators in problem selection, and for assisting the state in determining its allocation of resources for research.

Kaufman *et al.* (1967) identified the areas in which research on the development and utilization of human resources might yield the greatest returns in terms of usefulness for the formulation and implementation of public policy.

Quirk and Sheehan (1966) edited the proceedings of a conference on research in vocational and technical education held at the Center for Studies in Vocational and Technical Education at the University of Wisconsin in June, 1966. During the two-day conference, papers were presented on research projects in process or completed; a number of these projects had to do with problems related to organization and administration of vocational and technical education.

The American Vocational Association, in a pamphlet entitled "Research and Implementation in Vocational Education," identified eight broad areas of interest, which were: 1) philosophical foundations of vocational education, 2) the process of covational instruction, 3) preparation of professional personnel, 4) reorganizing the high school curriculum, 5) post-secondary development, 6) vocational guidance and career development, 7) evaluation of vocational education, and 8) vocational education needs of women and girls. Although this list does not apply specifically to administration, it has implications for many research problems in this area.

Lee and Hamlin (1968) identified gaps in recent research having to do with organization and administration of vocational, technical, and practical arts education. They were of the opinion that far more attention should be given to research in such areas as: 1) the organization of appropriate occupational education for everyone, provided jointly by public and private agencies at those times in life when it is needed, with particular attention to school systems which do not now offer such opportunities or which make them available to only a small percentage of the students; 2) the organization of new state and regional agencies to serve those who cannot be well served by existing institutions; 3) the relationship of occupational education in the public schools with occupational education provided by other public and private agencies; 4) the impact of Federal policies on state and local organization of occupational education; and 5) the policies and policy-making arrangements necessary to induce changes into the public school system and its sub-systems. One must agree that the areas identified above do, indeed, need to be researched. Many of these areas have not even been explored by the research reported in this review.

The list of research projects funded by the U.S. Office of Education for the fiscal year 1968 includes several dealing with problems of organization and administration. Examples are:

1. "The Role of the Community Resource Person in the Organization of a Coordinated Education and Manpower Development and Utilization Program."
2. "Identifying Priority Areas for Planning in Vocational-Technical Education."
3. "Development and Validation of a Program Evaluation Model for a Large City School System."
4. "Development of a Model Planning, Programming, and Budgeting System for Vocational Education at the State Level."
5. "An Exploratory Study to Analyze New Skill Content in Selected Occupations in Michigan and the Mechanisms for its Translation into Vocational Education Curriculums."
6. "Improvement and Development of the Organization and Administration of Vocational-Technical Education."

While information on these projects (in process) is not yet available it is encouraging to note that work is being done in such areas and that we will, in the near future, have the benefit of these research efforts.

Other areas of needed research are:

1. The internal administrative structures of educational institutions, especially the comprehensive high school and the multi-purpose community college. Also, the administrative structures of local school systems and state departments of education should be studied with a view toward making them more functional in regard to vocational and technical education.
2. The sources of vocational and technical teachers and the motivations for entering the teaching profession; also, problems of retention of faculty and administrators.
3. The financing of vocational and technical education, including the cost of alternative methods of training.
4. The more effective use of modern educational theories and technology in vocational and technical programs. This includes the adaptation of practices in general education (such as ungraded schools, team teaching, and flexible scheduling) to vocational and technical education.
5. The better use of community resources, including methods of combining classroom instruction and on-the-job training.
6. The articulation of vocational and technical education on the high school, community college, and adult education levels.
7. The effects of decision-making processes on the Federal, state, and local levels on the allocation of educational resources.
8. The use of program planning and budgeting techniques, including more effective approaches to evaluation of local programs.

9. The identification of factors which influence change and result in dynamic vocational and technical programs.

Summary

The Advisory Council on Vocational Education, in their report, *Vocational Education—The Bridge Between Man and His Work,* were critical of leadership in the administration of the Vocational Education Act of 1963, even though they were optimistic about the future of vocational education in the United States. They felt that, "...The Congress must recognize the long-term potential of the existing system of vocational education and utilize this system to the fullest extent," rather than promote an additional system of education outside the realm of the public educational structure. If vocational education is to exert its full impact upon the social and economic needs of our nation and its people, it will be necessary for persons in policy-making and program-planning roles to have a better understanding of the functions of administration as they relate to vocational and technical education. This suggests the need for research which is based upon what we now know about organization and administration in general, but with specific applications to the problems of organizing and operating vocational and technical education programs. Furthermore, it suggests that the leadership in the administration of vocational-technical education needs to discover more effective ways of adapting programs and processes to the rapidly changing conditions and needs of our society.

Research activity in all facets of vocational education has been greatly accelerated by the provision in the Vocational Education Act of 1963 which stated that "Ten percentum of the sums appropriated....shall be used .... to pay part of the cost of research and training programs and of experimental, developmental, or pilot programs...." As a result of this provision, problems relating to the administration of vocational and technical education have also received much more attention than previously, both by vocational educators interested in research and by other researchers interested in broader problems of organization and administration.

The most significant research in administration of vocational and technical education done during the period covered by this review was, with very few exceptions, not done by vocational teacher educators or their graduate students. Of the total number of doctoral dissertations included in this review, relatively few of them contribute much to our understanding of the effective and efficient operation of vocational and technical programs. There are undoubtedly a number of reasons for this condition. Most teacher educators have had little experience with administration and those who have performed in administrative roles are generally preoccupied with operational problems.

What appears to be the most promising kind of arrangement is the research team where two or more people with different backgrounds combine their talents and interests. Examples of this can be found in the centers for vocational and technical education where vocational educators join forces with sociologists, economists, and psychologists. Larger

institutions could organize such groups of scholars from related academic disciplines to work together on problems relating to the administration of vocational and technical education.

While reading the research reports in this review, the author became aware of the fact that certain institutions appeared to be specializing in research in a particular area of administration. The University of California at Berkeley has concentrated on problems of administration of vocational divisions in state departments of education. Researchers at the University of Nebraska have concentrated on the preparation of the general school administrator for a more effective role in vocational and technical education. North Carolina State University and Iowa State University have been especially interested in the problems of vocational education in rural areas. The quality of research in institutions where they are working on problems relating to a particular cluster or theme appears to be better than the research done in those institutions where the research efforts are more fragmented.

Both the quality and the quantity of research in administration of vocational education have shown considerable improvement since the passage of the Vocational Education Act of 1963 (and quite possibly, because of the research provisions of that act). But one cannot fail to note that there is much room for improvement, especially in quality. A high proportion of the studies completed since 1963 and reported here are surveys involving the use of mail questionnaires (sometimes with a very low response rate and no apparent attempt to check on non-respondents). While descriptive research is an appropriate method for some research problems, other methods should be considered and used when appropriate. We need controlled experiments, some of which would, of necessity, extend over a period of years and would involve data based upon observation, rather than mere opinion.

The research designs of many of the studies reviewed in this report are lacking in sophistication. Frequently, complex statistical procedures are employed, when the basic data do not warrant such procedures. That is, no amount of statistical treatment can compensate for unsound data.

The outlook, however, is bright. We have a ground swell of interest in research among vocational educators and among researchers in other disciplines. The American Vocational Association has recognized the importance of research and has given it a more prominent place in the structure of the Association. Teams of researchers are being formed through the centers for vocational and technical education and at other institutions of higher education and in private organizations. What is perhaps needed most is for one or more institutions to pool their resources and to focus attention on the problems of organization and administration of vocational and technical education.

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